

# COMPUTERWORLD

## E-mail directory chaos plagues IS

By Saruchi Mohan

120 miles away — to deliver the reports.

Electronic mail doesn't always propel companies into the 21st century. Sometimes it causes them to be hacked.

At BT in Ipswich, England, mismatched directories in the finance group's mail system last year botched plans to deliver key monthly financial reports on time to the board of directors in London.

Instead, the group, which uses All-in-1 from Digital Equipment Corp., dispatched a motorcycle messenger to London —

**"Without directories, without the ability to easily find somebody, users don't E-mail. They start reverting to faxes. It's a tragedy when that happens."**

— Chris Seymour, independent consultant

The giant British telecommunications firm isn't alone in its directory woes. Companies with heterogeneous mail systems, which have no central system for updating and synchronizing entries in different mail systems, face these problems every day. Few, however, talk about it.

As companies become more dependent on E-mail, directories will be extremely important, said Gary Howe, principal E-mail chaos, page 127

## Vines loses grip

Once-faithful Banyan users say migration 'certain' by 1998

By Loren D'Dio

Corporate users aren't bailing out of Banyan Systems, Inc.'s Vines network operating system in large numbers — yet.

But many Vines users, traditionally among the most loyal in the networking industry, said migration away from Vines is now almost a certainty within two years. That would have been considered unthinkable in the past.

"We're still using it, and we're still satisfied with it, but I'm looking for ways to avoid buying any more Vines in the future," said Bill Sheehan, senior technical support specialist at Stone & Webster Engineering Corp. in Boston. "I think most Vines users are waiting for the happy day to arrive when [Microsoft Corp.'s] Windows NT Server offers a full-blown enterprise directory services capability so we can all switch."

Interviews with Sheehan and other users last week indicated that corporate accounts are un-

**Top reasons for using Banyan's Vines**

- StreetTalk directory services
- Intelligent messaging capabilities
- Advanced security
- Central administration requires fewer network managers

**Top reasons for migrating from Vines**

- NetWare operating system has only 4% market share
- New third-party applications available
- Modem file and print services
- Banyan's information figure

easy about Banyan's repeated failure to articulate and deliver a technical and strategic product road map that can successfully compete with industry giants Microsoft and Novell, Inc.

Redwood, Banyan's latest three-year planned strategy was introduced in May with much fanfare but few specifics. Redwood is intended to expand the company's StreetTalk directory services and Enterprise Network Services to support Internet commerce and mobile and remote users.

Banyan last week announced yet another reorganization that

will result in the layoff of 100 workers.

These factors, coupled with the first-ever back-to-back quarterly losses in Banyan's history, are causing even the staunchest Vines supporters to seriously contemplate defecting.

Sheehan, who is a founding member of the newly created New England Enterprise Vines User Group, said he and many of his peers left a recent Association of Banyan Users International meeting in San Jose, Calif., confused about how Banyan, page 127

**SPECIAL REPORT**

Computerworld's new Electronic Commerce quarterly debuts with a look at how Hyatt, FedEx and others are reaping Web benefits in customer service, marketing and other areas. Plus, industry executives predict the future of business Internet use.

See page 9a.

**HYATT**

IN TECHNOLOGICAL...  
...with a look at...  
...the future of business Internet use.

## High-tech twist takes Turkey Day on-line

By Tim Ouellette

Some information systems organizations face a cornucopia of computing issues during the Thanksgiving holiday, including how to bust a turkey.

Butterball Turkey Co. in Downers Grove, Ill., runs a turkey help line. Nearly 30 employees answer questions over the phone about cooking turkeys and enter information into the company's call-tracking database.

And Ocean Spray Cranberries, Inc. depends on its computer network to keep track of the cranberry harvest each fall.

"From our perspective, it is the most busy time of year," said Thomas Mod-

estino, director of information services at the Lakerville, Mass., company. "We have a harvest with multimillion-dollar receiving stations only open for three weeks."

Ocean Spray's IS personnel

head out to rural crop receiving stations in places such as Wisconsin and Oregon in late August to ready the computer systems at the stations. Then they spend the fall managing the returns, tracking inventory and paying their 700 cranberry growers.

"For three months, we get an exceptional spike in volume," Modestino said. Sales of the company's cranberry sauce are limited largely to the holiday season, he noted.

**Surfing and stuffing**  
In addition to taking calls over its Turkey Talk Line, Butterball has gone on-line this year with a World Wide Web site, dubbed "The one place surfing and stuffing Turkey Day, page 16



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## News



There were few technology surprises at Comdex/Fall '95 last week outside of the much talked-about "cheap" boxes. There were, of course, the usual offbeat antics, such as the annual amadiad races at the Chili Cook-off for Children. To get the lowdown on show highlights,

### 2 Web woes

Kmart fires a webmaster for touting his personal page in the "corporate zone." The webmaster fires back with a "Kmart sucks" home page.

### 10 AT&T Wireless moves

AT&T Wireless switches gears by offering simultaneous Cellular Digital Packet Data and circuit-switched cellular service.

### 12 Apple takeover rumors

Apple is the target of several takeover rumors that include potential partners such as IBM, Motorola and Oracle.

### COMPUTER INDUSTRY

#### 32 Throwing mud

Packard Bell dips up some dirt on Compaq — pretty much the same dirt that Compaq tossed to start the whole mess.

#### OPINION

### 36 ISDN? Not!

Don't look to Integrated Services Digital Network as the next big hope for the information age, Paul Gilin warns.

### 37 Merger mania

Patricia B. Seybold shares her daydreams about dream-team industry mergers of the future. Are you ready for AT&T/Sun and Digital/Novell?

### 37 Retail systems

Roscoe Rant, our cranky, pseudonymous consumer-affairs columnist, takes on computer snafus in the checkout line from hell.

### 126 ATM and the network manager

ATM beckons the global network manager at Amgen, but he still sees reasons against taking the plunge, Charles Babcock reports.

## TURNOVER!

*That's the goal at some leading IS departments, where the seeds of employee satisfaction are being sown. Here's how they're doing it.*  
**Careers, page 103**

## Choice Cuts

*Which is more important — law enforcement or privacy? A debate between two purists makes points on both sides.*

**Enterprise Networking, page 66**



Stewart A. Baker



Philip Zimmermann



*The date change in 2000 will wreak havoc on systems. Fixing the problem will cost about \$1 per line of code and eat up man-hours, but some brave firms are taking on the chore.*  
**In Depth, page 97**

## Technical Sections

### DESKTOP COMPUTING

#### 30 New Newton

The newest version of Apple's Newton operating system sports improvements in handwriting recognition.



### WORKGROUP COMPUTING

#### 49 Virus alert

In recent months, a new strain of platform-specific viruses — designed specifically to invade networks — has been making the rounds.

### ENTERPRISE NETWORKING

#### 59 Videoconferencing barriers

Desktop videoconferencing still faces barriers to widespread acceptance — and many of them have to do with the network.

### 67 The Internet Page

At *Forster's Daily Democrat*, a newspaper in southern New Hampshire, editors are bringing the feistiness of the presidential primary season to the Web.

### LARGE SYSTEMS

#### 74 CA price changes

Changes in Computer Associates' mainframe software prices garner mixed reaction.

### APPLICATION DEVELOPMENT

#### 81 Cleaning up via the 'net

The Clorox Co. is using MetStep software to exchange package designs with its prepress, design and printing vendors over the Internet.

## Features

### MANAGEMENT

#### NOT HAPPENINGS

Need a winter getaway? Our editors pick eight great conferences to help you get ahead of technical trends.

#### 88 Book happenings

Meet Don Tapscott, author of the just-published book *The Digital Economy*.

### IN DEPTH

#### 94 Date challenges

Advice on the Year 2000 date change.

### CAREERS

#### 101 No turnover!

Keeping employees happy and on board.



*What do Alcoa, ITT Hartford and Texas Instruments have in common? They're transforming their IS departments into flat, team-based organizations.*

*In next week's Leadership Series article, author Robert Zawacki suggests how IS leaders can re-energize their staff.*

## Etc.

Company Index	124
Editorial/Letters	36
Inside Lines	128
Nov. 17 Stock Ticker	125
How to contact CW	124

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# Kmart's webmaster gets the boot

Liability issues lurk behind firing

By Kim S. Nash

Punctuation recently cost one man his job as a webmaster at Kmart Corp.

Rob Fournier, a programmer/analyst at the Troy, Mich.-based discount retailer, was assigned early this month to update Kmart's under-construction home page on the World Wide Web.

Fournier added a graphic explaining that the site would soon debut. He also added a hypertext link to his personal site in the form of a colored period at the end of the last sentence on the corporate page.

Big mistake. Then he told several co-workers about it. Bigger mistake.

On Nov. 7, Kmart fired Fournier for violating its Standards of Business Conduct policy, company spokesman Dennis Wigen-

confirmed last week.

Adding fuel to Kmart's corporate fire is the fact that Fournier's personal page was linked to a sexual image intended for mature viewers. In theory, Web surfers could follow Kmart's page to Fournier's site and then drill down to an explicit picture (Fournier blacked out parts of the graphic that might be considered obscene).

**Out of line**  
In a written statement, Wigen said Kmart's employee conduct policy "includes specific dos and don'ts, several of which forbid personal use of the Internet and any sexual innuendo."

Fournier, 29, said he had no ill intentions. "I thought pages should have a link to wherever created them, to give credit where it's due," he said.

Further, he said, a committee formed to design and create Kmart's Web site approved of his plan to add his personal link.

"The Web is all about fun and links. You don't go to Web sites that don't have links," he added.

Fournier was so angry about his dismissal that he immediately created a Web site dubbed "Kmart-sucks." More than 1,000 hits were made to the site in its first three days of operation, Fournier said.

His goal, he said, was twofold: He wanted to let the Internet community hear his story and take the pulse of his peers.

Fournier so far has received more than 100 electronic-mail messages, he said, split down the middle. "But no one has said I deserved to be fired."

"I'd be surprised if we don't see more of this kind of e-mail situation," noted Matt Cutler, a founding member of Webmasters Guild, a nonprofit professional association in Cambridge, Mass.

Both Kmart and Fournier were probably at fault, Cutler said.



More than 1,000 hits were made to this "Kmart-sucks" Web site in its first three days of operation.

Companies must take the Internet seriously enough to devise corporate policies about linking and other topics before getting on the Web, he explained. And webmasters have to separate personal and workplace activities, Cutler said.

The guild plans to create a

code of ethics next year. "Nothing deters us but a frame of reference for businesspeople," he added.

Kmart hasn't contacted Fournier about the "Kmart-sucks" site, which includes disparaging remarks about the company and its Internet strategy.

Whether a company is liable for content or links found on employee Web pages is one of the many legal unknowns in cyberspace, said Barry D. Weiss, a cyberlaw expert at Gordon & Glickson in Chicago. Even if the link isn't illegal, it can be embarrassing, he noted.

Weiss cautioned that employee pages deriving into personal topics — such as hobbies, family photos, and favorite Websites — should not be linked to the corporate Web site.

A firm could face "vicarious liability" under the theory that providing a Web link to illicit material is akin to making a bad business referral, Weiss said.

# Low-cost access to boost wide-area ATM appeal

By Bob Wallace

As local telephone companies gear up to offer bargain basement prices on Asynchronous Transfer Mode (ATM) access lines, the lure of private ATM networks is expected to pull in users who have shunned and sidestepped wide-area networks.

A, soon-to-be-released analysis of access pricing by local telephone companies reveals that carriers are pricing T1 ATM access at 40% below regular T1 line access and T3 ATM access at 50% less than regular T3 line access.

The analysis was conducted by ATM guru Tom Nolle, president of CMI Corp., a consulting and research firm in Voorhees, N.J., that closely tracks the ATM networking equipment and wide-area services industry. Nolle polled the seven regional Bell holding companies.

He and other analysts said the pricing strategy will have

far-reaching effects on how quickly users move to private ATM networks, largely because access links typically represent half the cost of a WAN.

"Users need to take a hard look at the next two to three years of their network evolution and decide whether they want to stick with their [uncolored] division multiplexed networks or take the ATM fork in the road," Nolle said.

For example, local telephone companies charge users \$600 a month for a regular T1 line, but they charge 38% less, or about \$380, for T1 ATM access. The CMI survey found. The carriers charge users \$3,600 a month for a T3 access pipe, but only \$1,800 for T3 ATM access.

Aggressively priced ATM access links, which typically make up about 50% of WAN costs, will be most alluring to users, analysts said.

"This will make ATM much cheaper for a wider variety of

users because access is a major contributor to the cost of an ATM network," said Bill Berry, a senior staff planning and design analyst at Amoco Corp. in Houston. "This pricing will also help users more easily make the business case for T1 and T3 access, and drive the entry price for T3 access, which has been prohibitively expensive."

Other users agreed. "These prices will constitute the biggest reason to put ATM in WANs," said a network manager at a major Northeast pharmaceutical firm who requested anonymity. "Goodness, this will force more and more users to take a strong look at ATM in the WAN. The pricing is the primary aspect of ATM that gets users' attention."

## Switch swap

Today, a huge number of private time-division multiplexed networks are based on switching systems from market leaders Ascom Timpex, Inc. and Network Equipement Technologies, Inc. Users would need to swap in ATM switching systems to make the move.

Time-division multiplexing is

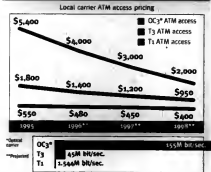
a technique for transmitting a number of separate data, voice and/or video signals simultaneously over one communications link by quickly interleaving a piece of each signal one after another.

In contrast, ATM supports much faster switching and less delay. It is widely regarded as the switching technology of the

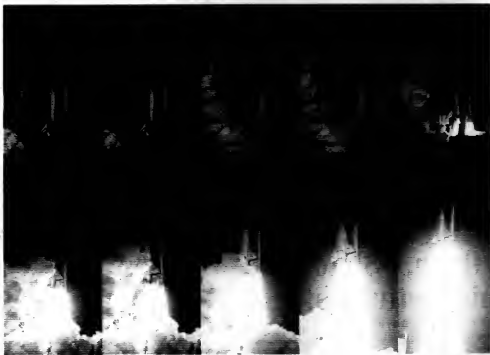
future, as evidenced by the introduction of switches with ATM capabilities from time-division multiplexing powerhouses Ascom Timpex and Network Equipement Technologies.

Widespread ATM deployment is still a few years away. See page 59.

## Less and less



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# Feds furlough IS workers

Budget impasse decimates some units by 90%; processing pandemonium expected when govt. operations resume

By Gary H. Anthes  
and Mitch Reiss  
WASHINGTON

"No one is available to take your call at this time," said recorded messages at countless government computer facilities last week.

By the weekend, some 100,000 "nonessential" federal employees, including thousands of information systems professionals, had gone home to wait out the budget stalemate between the White House and Capitol Hill.

In September, at the request of the White House, each agency drew up a government shutdown contingency plan that identified employees deemed "nonessential" and subject to furlough in case of a budget crisis. Barely two months later, many federal IS departments put the plan to work.

Bob Evans, director of the U.S. Department of Veterans Affairs data center in Austin, Texas, said only 35 employees out of a staff of 400 were on the job in the computer room to keep essential systems running. The data center handles payroll, bill payments and medical records.

The furloughed employees would like to work, "but legally we can't let them in the door," Evans said. "We've seen this [shutdown] happen four times in the last 15 years, but this one has been the most confusing and frustrating."

That could be because this shutdown has gone on longer than the previous three. The result will be a "tremendous" backlog of chores, according to Evans. Indeed, Joe Leo, deputy administrator for management at the U.S. Department of Agriculture's Food and Consumer



Furloughed computer scientist Jerry McAuliffe says the U.S. Geological Survey also recently laid off 600 people. "This is just another punch in the stomach," he says.

Service, predicted that the backlog of computer processing at some agencies will be so great that they will have trouble catching up when employees return. "Everyone will be screaming for priority, and the IS divisions will be caught in the middle," he said.

All military and most civilian computer and communications people at the U.S. Department of Defense were on the job last

week, a Pentagon spokeswoman said. However, those developing new systems got an unexpected holiday.

But elsewhere, systems development continued. A spokesman at the Internal Revenue Service said programmers making changes for the upcoming tax processing season would stay on the job.

At the General Services Administration, 422 IS employees were furloughed, while 69%, or about 900, stayed on the job, a GSA spokesman said.

Steven M. Vohari, acting director of information policies and systems at the U.S. Department of Housing and Urban Development, said almost all of the agency's 250 systems were shut

down because the work wasn't deemed essential to life and property. Only a system critical to the Government National Mortgage Association (Ginnie Mae) and office automation systems for about 100 "essential" employees were operating, he said.

Jerry McShane, a computer specialist at the U.S. Geological Survey, was furloughed but nevertheless called in to retrieve messages from his voice mail. He said the furlough came on the heels of a 600-person reduction at the agency. "Morale is not flying very high at this point," he said. "This is just another punch in the stomach."

The departments of Energy and Agriculture escaped the furloughs because Congress and the White House approved funding for them before the budget gridlock set in.

## A Capitol idea

Visitors to many federal sites last week were limited to virtual access. The Smithsonian Institution closed its doors, but its World Wide Web server remained open at <http://www.si.edu>. And you could forget getting the IRS by phone, but those with PCs and modems could get a return to their e-mail questions at <http://www.irs.gov/efile/efile.htm>. For a list of government Web servers, visit the Federal Web Locator at <http://www.fws.gov>.

# X/Open, OSF to unite activities

Possible merger seen as users push to eliminate duplicate meetings, costs

By Alan S. Postman

With the prospect of a merger looming, X/Open Corp. and the Open Software Foundation (OSF), the Unix industry's Top 2 open systems organizations, last week said they plan to combine trade show and conference activities to eliminate overlap.

Users at large corporations essentially forced the cooperative move, OSF and X/Open executives acknowledged.

The users had complained about having to attend duplicate meetings and pay membership fees to both groups. And interest in Unix-only issues has steadily declined since the major Unix vendors agreed on common interfaces last year and this year.

The OSF has 400 member companies. Hell are large Fortune 500 and other end-user



Interim OSF CEO Jim Bell. The OSF and X/Open hope to merge even tighter ties.

companies. X/Open has 131 member companies, including 70 user companies.

Some users who had been active in the groups have dropped out of one or both. "I don't really hang on their every word anymore," said a user at a large site

who requested anonymity. "We found that what they were saying wasn't very applicable to our day-to-day work. We went off and started building systems instead of spending a lot of time in a vendor consortium."

Microsoft Corp.'s desktop takeover with Windows and the growing presence of servers based on Microsoft's Windows NT have dampened enthusiasm for Unix-only enclaves.

## Cost containment

And vendor members in both groups wanted to reduce costs, which also prompted the change, analysts said. X/Open has an annual budget of about \$18 million, half of it raised from license and membership fees. The OSF has an annual budget of about \$40 million, most of which comes from vendor and user fees.

"You can bet your bottom dollar that the staff isn't driving this [joint effort]," said Nina Lytton, president of Open Systems Advisors in Boston. "It's the directors and the customers."

She said the two groups had explored a merger before but backed off because the OSF's role of building technology was different from X/Open's role of certifying open systems stan-

dards. "They have had separate missions, so the question is whether or not they will get more bang for the buck by being together," Lytton said.

The OSF this year handed off all its product development to vendor firms. It is coordinating industry-standard software development instead.

The OSF also is actively recruiting a president and chief executive officer to replace in-

term CEO Jim Bell, who is on leave from Hewlett-Packard Co. Bell expects to name a successor by early next year.

Many believe the OSF and X/Open have failed to deliver on long-held promises. "We're still waiting to see this Unix union we've been promised," said Dave Grubb, a computer security manager at Lawrence Livermore National Laboratory in Livermore, Calif.

Grubb was active in the OSF meetings. "How it accomplished doesn't matter so much anymore," he said. "It is a bother, quite frankly, to administer all these variations and colors and flavors of Unix." (HP, Novell, Inc. and SCO, Inc. are merging their Unix systems; see story, page 56.)

A task force of top OSF and X/Open managers has been meeting in recent weeks to consider several options, said Jeff Hansen, marketing vice president at X/Open. "Merger has always been an option," he said, but other scenarios also are being discussed.

A joint meeting of OSF and X/Open user groups (see chart) is planned for March. "Proposals for even tighter ties between the two organizations" will be presented at that time, Bell said.

## What a pair

How OSF and X/Open are collaborating:

OSF will base its architecture on X/Open's framework

There will be one Uniform trade show exhibit in February

There will be a combined user group conference in San Francisco in March

A task force of top executives will work to eliminate overlap

X/Open's OSF serves on OSF's board of directors and vice versa



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# Holiday Inn books client/server

IBM to help replace mainframe-based reservation system; new system to include 'net-based airline, travel connections

By Mitch Wagner

Holiday Inns Worldwide has hired IBM to help build a hotel booking system that the hotel chain hopes not to have any reservations about.

Holiday Inn plans to activate the reservation system for its 1,900 hotels in mid-1997. The Galaxy Project will use client/server technology to replace a 15-year-old mainframe-based reservation system, said Dick Smith, senior vice president of information technology and chief information officer at the Atlanta-based hotel chain.

"Customers will have the ability to book faster and see more choices in accommodations," Smith said. The current system lets users compare room prices. The new system will tell them about room size, location, amenities and other features.

## Hooked up

The system will offer greater interoperability with other systems, including Internet-based reservation systems, airline and travel-agency reservation systems and Holiday Inn's own decision-support systems.



**"Customers will have the ability to book faster and see more choices in accommodations."**

**Dick Smith**  
Chief information officer,  
Holiday Inns Worldwide

IBM, meanwhile, will let other hotel chains use the Project Galaxy technology through the company's Integrated Systems Solutions Corp. subsidiary.

The deal between Holiday Inn and IBM marks a key step for the hotel chain, which in February

decided to leave its 25-year-old business of outsourcing reservations for other hotels. Holiday Inn had signed up only about a half-dozen chains. The company will fulfill its existing contractual obligations but won't sign up any new business. Smith said the hotel chain will try to persuade its existing customers to give their business to IBM.

## Threw in the towel

Holiday Inn has backed out of the outsourcing business not only to avoid diluting its resources but because it was difficult to persuade companies to sign on with a competitor Smith said.

"They couldn't find many customers," said Tom Woodall, publisher of "CIS Update," a travel industry reservation systems newsletter. "They had a few small chains they were working for but they never landed the big customer, and they finally just gave up."

Project Galaxy will be based on technology that Holiday Inn acquired when it bought Intelligent Networks, Inc., a vendor in Reston, Va. Holiday Inn acquired Intelligent Networks, Inc.



**Holiday Inn, founded in Memphis in 1952, was one of the first hotel chains to offer such amenities as a swimming pool, air conditioning, a restaurant, phones, free parking and air.**

February for about \$2 million.

The final platform for the central server hasn't been determined, although it is likely to be either Microsoft Corp.'s Windows NT or a version of Unix, said Dennis Erskine, vice president of applications and systems development at Holiday Inn. He is also a former president of Intelligent Networks.

The central server will communicate with Windows NT servers located at Holiday Inn. Client software, meanwhile, will run mainly on Apple Computer, Inc. Power Macintosh clients, al-

though the client will also be compatible with Windows and Unix systems running the Open Software Foundation's Motif graphical user interface.

Galaxy is being developed on IBM RS/6000 workstations that run the AIX operating system. The existing Holiday reservation system runs on an IBM ES 9000 Model 630 mainframe that runs IBM Transaction Processing Facility software.

Project Galaxy is part of Holiday Inn's companywide series of upgrades of its sales software, catering systems and financial automation software.

# IBM takes 32-bit route for CICS

OS/2, Windows NT upgrades due in '96

By Craig Stedman

IBM plans in the first half of next year to put a little more boot behind distributed versions of its CICS transaction processing software. *Computersource* has learned.

CICS is being upgraded to a 32-bit implementation for IBM's OS/2 operating system and Microsoft Corp.'s rival Windows NT platform, according to IBM officials. The OS/2 product is due in the first quarter, and the NT version will follow in the second quarter.

IBM will also release its first batch of object-oriented technology for CICS in the first quarter. In addition, a new version of mainframe CICS that lets multiple systems share data stored in VSAM flat files is scheduled for initial shipment early next year (see chart).

Transaction monitors such

as CICS function as traffic cops that provide end users with reliable and secure access to data on mainframes or other servers. The distributed version can be used for application development, as gateways to larger systems or as local servers in

branch offices.

CICS currently supports OS/2 and Windows NT in a 16-bit mode that doesn't take full advantage of the operating systems. The upcoming Version 3 of CICS for OS/2 and CICS for Windows NT includes 32-bit application programming interfaces and support for 32-bit lan-

guages, such as the object-oriented Cobol that IBM shipped last month, said Geoff Sharran, a CICS strategy and marketing consultant at IBM's software lab in Hursley, England.

Customers and analysts said the jump up to 32-bit technology should make the distributed CICS software faster and more scalable.

Application development may also be streamlined because programmers won't have to worry about memory segmentation issues that are endemic to 16-bit technology.

"We're trying to get everything into 32-bit, which should have much better speed," said Jim Langton, control systems manager at Long Island Lighting Co. in Hicksville, N.Y. The electric and gas utility uses a dozen CICS for OS/2 servers as gateways to its mainframe data, but it is "finding out that the 16-bit applications are very slow,

especially as we put more and more stuff on those machines," he said.

Long Island Lighting also uses CICS for OS/2 in application development, and it is testing CICS for Windows NT. Langton said. The NT product became available early this year, but IBM just started publicly marketing it in the past month.

The reduced programming load made possible by 32-bit technology should "be a life-quality improvement for CICS developers," said John Chapman, head information architect at Amoco Corp. in Chicago. Like Long Island Lighting, Amoco has used CICS for OS/2 to write applications for mainframe CICS.

The 32-bit upgrade will also make it easier to move applications among the OS/2 and Windows NT versions and Unix-based CICS software, Sharran said. But one drawback is that existing 16-bit OS/2 and Windows NT applications will have to be recompiled to work with the 32-bit versions, he added.

## New kinds of CICS

A sample of IBM's upcoming CICS products

PRODUCT	KEY NEW FEATURE	AVAILABILITY
CICSplex System Manager for MVS Version 4, Release 2	Agent for managing CICS for OS/2 servers	Dec. 15
Object-oriented CICS client	Object-oriented libraries and interfaces	Q1 1996
CICS for MVS Version 5	Lets multiple systems access data stored in VSAM flat files	Q1 1996
Transaction Server for AIX Version 1	CICS for AIX bundled with other products	Q1 1996



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# Customer service apps rewarded

By John King  
WASHINGTON

The growing role of information systems as a business builder, rather than a cost saver, was very much in evidence here last week at the seventh annual Awards for Achievement in Managing Information Technology.

Systems that were designed to boost customer service in the financial services, pharmaceutical and health care industries all won top honors.

Among the winning companies are the following:

■ **State Street Bank & Trust Co.** for a multi-currency accounting system and reporting application that lets pension managers track financial events and data from multiple sources under a single format.

■ **Fidelity Investment Co.** for an integrated voice and data customer service system that, among other things, lets callers execute trades.

■ **Salt Lake City-based Intermountain Health Care**, for a clinical management system that lets doctors and nurses use bedside terminals to enter and

access real-time patient data.

■ **Quintiles Transnational Corp.** for a series of network-integrated clinical systems that speed drug approvals by allowing researchers around the globe to share real-time data.

What is evident from several of the winners is that cost-saving doesn't always immediately follow state-of-the-art systems deployment. Instead, greater customer satisfaction and increased business volume are often the first benefits realized, especially with client/server systems.

"Client/server is not a low-cost architecture. So in

the beginning, it's a hard sell," said David Sexton, executive vice president and chief information officer at State Street Bank.

But eventually the bank's new applications helped it win several lucrative new contracts, including one with the California Public Employees Retirement System.

At Quintiles in Research Triangle Park, N.C., executives also quantify the value of IS in terms of business volume, which has increased 50% annually for the past three years.



State Street's David Sexton says some client/server applications can be a hard sell.

## Time Line will go it alone

By Stewart Deck

A new time line begins today for Time Line Solutions Corp.

The Novato, Calif., subsidiary of Symantec Corp. will announce today that it will buy out its parent's project management assets and become an independent company.

"We determined that it was important that the Time Line group be able to focus on the core areas of our success," said Mike Webb, president and chief executive officer of Time Line Solutions.

"This is not intended as an aggressive action of any sort. It was the appropriate thing to do for both companies."

"This is a positive move in the

long-term that allows [Time Line] to concentrate on project management," said Brendan Conway, an analyst at Garret Group, Inc. in Stamford, Conn. Symantec brought project management applications on board in 1987 with the purchase of Breakthrough Software. That company was folded into Symantec's project management group.

The group became Time Line Solutions Corp. in April. It accounted for 8%, or about \$5 million, of Symantec's revenue in its last quarter, according to the company's financial results.

Webb said Time Line Solutions will concentrate on its base of project management customers and customizable project tools.

## News

### News Shorts

#### Kaleida killed

Five months after they gave Kaleida Labs, Inc. a vote of confidence, IBM and Apple Computer, Inc. last week pulled the rug out from under their 4-year-old, multimedia joint venture. Apple will take over development of its ScriptX multimedia programming language, the only piece of Kaleida's multimedia plans that ever became a reality. IBM will deliver on its promise to integrate the language with its VisualAge visual development tool; a beta release of Visual ScriptX is due early next year.

#### IBM changes channels

The IBM PC Co. last week said it will solicit and service customers only in collaboration with major channel partners. The idea has been under consideration for the past two years. The company will drop its PC Direct mail-order service and other direct marketing efforts. Compaq Computer Corp., meanwhile, said next year it will introduce a range of low-cost, entry-level PCs. Pricing for the machines will start at about \$4,400. The systems will feature high-end chips such as the Pentium 100-MHz chip, an 8M byte hard drive and a move from 16-bit to 32-bit architecture.

#### Microsoft Web server enters beta

Microsoft Corp. this week plans to distribute a beta-test version of its much-anticipated World Wide Web server for Windows NT. The beta server will be distributed to 15,000 customers, development partners and resellers. The Internet Information Server, formerly known as Gateway, uses administrative and installation capabilities already built in to the NT operating system, a company official said. Product pricing won't be set until a final version ships next quarter (see story, page 62).

#### Cray cranks up the speed

Cray Research, Inc. next week will introduce a successor to its massively parallel T3D system that analysts expect will run three times faster than the original machine, according to sources close to the company. The box, code-named T3E, also includes a Gigabit I/O subsystem and operating system enhancements meant to improve performance scaling as more processors are added.

#### Random House gets CIO

Random House, Inc. recently named John J. Ruess as chief information officer. Ruess will oversee all aspects of the New York publisher's information systems, including editorial, distribution, back-office and manufacturing systems, and the firm's embryonic new media efforts. He replaces Richard Blosser, who was vice president of IS at Random House for 35 years.

#### Calling Evelyn Wood!

Nippon Telegraph and Telephone last week claimed it made the world's fastest data transmission when it sent data at 400G bit/sec along 100 kilometers of fiber-optic cable at its Optical Network Systems Laboratory in Yokosuka, Japan. The experiment, using a new type of light generation, shattered the old record of 2.5G bit/sec.

#### OpenView gets SNA monitor

Administrators who use Hewlett-Packard

Co.'s OpenView network manager will be able to monitor legacy SNA networks. HP last week said Raleigh, N.C.-based NetTech, Inc.'s EViewOpen SNA management software works with OpenView and compatible tools.

#### Object supermarket opens

IBM and CyberSource Corp. in Menlo Park, Calif., last week said they have launched an on-line supermarket for component software. The Reusable Software Component Market, a World Wide Web site at <http://compso.com>, will let users browse component software. IBM, Apple and a dozen smaller vendors have already signed up for the service; vendors can pay \$800 per component to put their products in the on-line catalog.



#### ATM Forum releases new spec

In a move designed to drive the development of Asynchronous Transfer Mode (ATM) technology to the desktop, the ATM Forum last week officially approved the long-awaited 25.6M bit/sec, physical layer specification. The 25.6M bit/sec ATM cards, already shipping from a number of vendors, offer users a cheaper alternative to widely available 155M bit/sec units.

#### Apple settles Sagan suit

Apple said it amicably settled a lawsuit brought by astronomer Carl Sagan, whose name was used as one of the code names for the original Power Macintoshes. Sagan had sued Apple for using his name without permission and for publicity surrounding the dispute. After Sagan's initial complaints, Apple developers changed the code name to BBA, which insiders said stood for "bitch-ass astronomer." Apple didn't disclose terms of the settlement.

#### On-line services unraveling?

Rockville, Md.-based GE Information Services is seeking a buyer for its 10-year-old General Electric Network for Information Exchange, or GENIE, on-line service, according to a memo sent to subscribers last week. Meanwhile, rumors continue to swirl that Sears, Roebuck & Co. wants to shed its 50% stake in Prodigy Services Co., perhaps selling out to co-owner IBM. A Prodigy spokesman had no comment.

**SHORT TAKES Novati.** Inc. introduced its 32-bit NetWare Client for Mac OS software last week at Comdex/Fall 95. ... Don Cantwell, formerly program director of intelligent vehicle highway systems at Gramman Corp. in Bethesda, Md., has been named CIO at 1-800-MATTRESS in Long Island City, New York.

# Hitch A Ride To Second-Generation Client/Server On CA-OpenROAD.

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## News

# AT&T expands wireless focus

By Mindy Hladgett

AT&T Wireless Services in Kirkland, Wash., the biggest player in wireless data, has broadened its vision from a single-minded focus on Cellular Digital Packet Data (CDPD) to encompass a wide

variety of access protocols.

In the long run, this will mean more options and fewer limits for mobile, wireless users. Analysts say it is the kind of thinking needed to jump-start the industry and attract customers.

But it also signals AT&T's growing ac-

knowledge that CDPD may not be a dominant stand-alone technology, industry observers noted.

Last week, AT&T Wireless, formerly McCaw Cellular Communications, Inc., announced the following:

• It will simultaneously start rolling out

CDPD and circuit-switched cellular service. The dual offering will begin in Pittsburgh immediately. It is already available in New York and New Jersey.

• It is close to signing interoperability agreements with fellow CDPD carrier Ameritech Cellular Services in Hoffman Estates, Ill.

"By doing this, AT&T is acknowledging that CDPD will only coexist alongside other technologies, not be the only or the

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COMPUTERWORLD NOVEMBER 20, 1995

## What's the difference?

While CDPD and circuit-switched cellular both use the cellular network to send data, they do have differences.

CDPD	Circuit-switched cellular
For short, bursty file transactions such as credit card "swipes"	Uses a dedicated line for longer file transfers

primary mode," said analyst Andrew Seybold, editor of "Outlook on Communication and Computing," a newsletter in Boulder Creek, Calif.

Circuit-switched cellular is a complementary technology to CDPD in that both use the cellular network to send data over cellular links. But unlike CDPD, circuit-switched data uses a dedicated line.

While other carriers have been adherents to circuit-switched cellular as well as to CDPD, AT&T Wireless has been slow to pick up the standard because it feared losing momentum for CDPD.

Industry observers said this was a mistake.

"They were focused on CDPD, and they didn't want to appear any less committed by tonking at another service," said Roberta Wiggins, an analyst at The Yankee Group in Boston. "They were wrong. Circuit-switched cellular is here to stay."

But AT&T officials insisted the move doesn't signal trouble for CDPD technology, which has experienced a sluggish network rollout and a dearth of customers.

Thomas Trinneer, director of systems engineering at AT&T Wireless, said the company had to overcome doubts about the viability of the technology.


"But there have been tremendous advancements," Trinneer said. "So as we build our strategy, we believe they are complementary services."

Trinneer said AT&T Wireless is close to signing interoperability agreements with Ameritech.

Interoperability agreements ease wireless access and availability by allowing roaming between different carriers. While such agreements are vital to advancing the wireless cause, the carriers have been slow to sign contracts, and broad interoperability remains a ways off, industry observers said.

But while it's important, interoperability doesn't mean anything if you don't have the network rollouts," Seybold said.

EcoTOOLS®

 Tiplanet.com needs top brass support. See page 40.

To launch Windows 95, they  
used 4 networks,  
85 magazines,  
100 radio stations  
and, *ahem*,  
one server.



**TO POWER THE ON-LINE LAUNCH OF  
WINDOWS 95, MICROSOFT CHOSE THE  
DIGITAL PRIORIS™ HX 5900P SERVER.**

Failure was not an option on August 24. Microsoft's official launch date for Windows 95 marked the biggest new product introduction in industry history, not to mention one of the great all-out media blitzes. On this day, a minor glitch would have made headlines. So when all eyes turned to Microsoft—Microsoft turned to Digital.

For the on-line launch of Windows 95, Microsoft plugged in the Digital Priors Internet Server—ten of them, in fact. A decade

of Microsoft/Digital teamwork was behind the decision. So was the simple realization that, for a job that meant handling almost two million hits the first day, the Priors HX 5900P was simply the best server around. After all, its fault tolerant features do include drive arrays, ECC memory, redundant cooling systems and power supplies. Put simply, Microsoft chose Digital for the same reasons you should. Reliability. Power. And no slip-ups.



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# Red Brick on road to quicker queries

By Dan Richman

A new way of indexing data is the centerpiece of the latest version of Red Brick Systems, Inc.'s Warehouse relational database management system, which is due out Dec. 4.

## Data warehousing

The indexing feature will let users efficiently run queries that would be time-consuming for many competing products, analysts said.

"Red Brick's new indexing scheme is innovative and advanced. And so far as I know, it's unique," said Donald DePalma, a senior analyst at Forrester Research, Inc.

Benj Varghese, manager of the marketing database at Holiday Inn Worldwide in Atlanta, said Version 4.0 of Red Brick Warehouse performed queries an average of 20 times faster than the current version against the chain's 12GB-byte database.

"Our marketing staff of 22 gets very frustrated waiting for results to their queries," he explained. "This is so much faster they may not have to wait at all."

## Quick hit

Indexing is a shortcut for directing queries to data, just as a book's index directs readers to topics or phrases without requiring them to scan the entire contents. All RDBMSs use indexing, but the type or combination of types used determines an RDBMS's capabilities. Red Brick Warehouse 4.0 incorporates TargetIndex, a type of bit-mapped indexing.

Bit-mapped indexes are extremely quick, but traditionally they have been able to work only on low-cardinality data, which has only a few possible values, such as gender. TargetIndex makes bit-mapped indexing as fast as high-cardinality data.

Red Brick's TargetIndex would allow a marketing manager at a retail chain to get an efficient response to the query: "Show me all customers 35 to 40 years old who are single, female physicians with an income of \$60,000 or more and two cars."

Varghese said it took him about 50% longer to build TargetIndex than another index called a B-tree index. But in addition to outperforming B-tree indexes in some cases, the TargetIndex used about 40%

less disk space, he said.

Red Brick Warehouse runs on Digital Equipment Corp.'s Unix, Hewlett-Packard Co.'s HP/UX, Sun Microsystems, Inc.'s Solaris, IBM's AIX and other Unix platforms. Prices start at \$37,500.

The next challenge for Red Brick is integrating its read-only RDBMS with transaction-oriented RDBMSs, replication schemes and systems management software, DePalma said.

Plot adds data analysis to its software. See page 44.

## On Target

TargetIndex, the centerpiece of Version 4.0 of Red Brick Warehouse, claims to be the first implementation of bit-mapped indexing that works with high-cardinality data.

Low-cardinality data has only a few possible values, such as gender or marital status. High-cardinality data has hundreds of possible values.

For example, in a table, the field marked "occupation" might have hundreds of possible values—such as teacher, salesperson or clergy—so it couldn't be indexed using traditional bit-mapping. The alternative is to use a "B-tree index" on each field and perform a separate pass through the database for each attribute.

But using a B-tree index would take three to 10 times longer to process than using TargetIndex, said Dan Srinivasan, Red Brick's director of product marketing.

Red Brick database administrators can combine TargetIndex with low-cardinality indexes, star indexes and B-tree indexes. Their choice, which isn't apparent to end users, makes for maximum efficiency, Srinivasan claimed.

—Dan Richman

# Industry pundits insist Apple is ripe for picking

Everyone who is anyone considered a possible partner

By Lisa Pizarillo

At Apple Computer, Inc., even good news seems overshadowed by the company's current state of trouble—the inability to meet product demand, a \$1.3 billion backlog of orders and two consecutive quarters of less-than-expected earnings.

For example, the Cupertino, Calif., computer maker can point to a host of recent achievements. It was ranked first in customer satisfaction by J. D. Power and Associates, delivered OpenDoc for the Macintosh, shipped a record number of units in its fourth fiscal quarter ended Sept. 30, captured the top spot as the No. 1 PC seller for that same quarter—the same period that Microsoft Corp.'s Windows 3.0 shipped—and boosted its overall market by 2.5%.

Yet Apple is still dogged by speculation that it needs to be acquired or sell off pieces of its business to survive. This despite the fact that Apple is a more than \$9 billion company, which means potential buyers would need very deep pockets. Although Apple officials deny the company is on the block, sources close to the company said Apple is in discussions with several bidders.

**Mating game**  
Just about everyone who is anyone—from Hewlett-Packard Co., Sony Corp., Oracle Corp., Motorola, Inc. and IBM—have been named as suitors. Some of these potential pairings show synergy, particularly for those who want Apple's chunk of the education market. But others just don't make sense, especially to users who are adamant that Apple remain on its own.

Here's what Apple watchers—the financial community devoted to Macintosh users and dealers—have to say about whom Apple should cozy up to:

**Apple on its own**  
"Apple has to stay independent but work smarter to take advantage of its existing relationships with IBM and Oracle or work with HP to get more into business. Apple should just do what they do best—make good, useful, reliable software and innovative hardware," said John Papa, a partner at The Carson Group, a New York-based financial consulting firm with 150 Macintoshes.

"In high-tech companies, the family jewels are in people's heads, and people aren't going to stick around if Apple is bought. Apple doesn't need to get bought out in order to survive," said Ken Lem, editor and publisher of "Cybermedia 2001," a newsletter in Cupertino, Calif.

**Hewlett-Packard and Apple**  
"HP has a deal with Intel to do next-generation microprocessors," said a skeptical Eugene Glazer, an analyst at Dean Witter Reynolds, a New York investment firm.

"HP only makes sense because HP is good at what Apple has failed at—day-to-day execution," said Bill Garley, an analyst at First Boston, an investment banking firm in New York.

**Sony and Apple**  
"Sony is a more logical choice. It has power in consumer electronics and recognizes that it needs to get into the PC market. Also, Sony and Apple have had a relationship," Glazer said.

**Oracle and Apple**  
Oracle President Larry Ellison's previously stated "interest in Apple is acquiring technology to implement his world view" of dumb or nearly dumb devices as a mass-market product. "But I can't imagine Oracle and Apple being in the same bed together," said Amy Wohl, editor of "Trends Letter," a newsletter in Narberth, Pa.

**Motorola and Apple**  
"Motorola sells PowerPC chips whether or not they own Apple. I don't think there is an advantage to buying the company," said one New York-based financial analyst who asked not to be named.

**IBM and Apple**  
"The PC is a commodity unless you control the technology directions. IBM has its own microprocessor, and they are trying to control [technological direction] but keep failing. Apple would give them a legitimate, viable operating system that uses the PowerPC chip. IBM was reportedly interested, and Apple did not return the interest," Glazer said.

**Microsoft and Apple**  
"Microsoft has said a thousand times that they do not want to be in the hardware business. Why on earth would Microsoft want Apple? Granted, Microsoft would be unhappy if Apple were purchased by IBM, but that's not going to make Microsoft hurt them," Wohl said.

**FBI in the blank and Apple**  
"There are a whole lot of possibilities. A year ago, I would have said IBM or Motorola, but not now. NEC and Fujitsu are seeing their mainframe business hit the wall. I'm sure either one of them would die for the merely little 9% of the PC market that Apple has," said Kimball Brown, an analyst at Dataquest, Inc., a market research firm in San Jose, Calif.

**Apple's future**  
Apple's future is uncertain. The company is currently operating at a loss and is facing significant challenges in the market.

**Growth chart**  
Apple has surpassed IBM in regain its ranking as the second-largest computer maker behind Compaq Computer Corp. Apple's market share grew to 9% in the third quarter of 1995, from 7.4% in the second quarter.



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Liberation Systems for Enterprise Activities

CODA

# NT aims for 64 bit

Microsoft targets year 2000 delivery, offers few details

By Stuart J. Johnston

The next major release of Windows NT is two years away, but Microsoft Corp. executives confirmed last week that they are already planning for the release to come a few that — a 64-bit version of NT.

A Microsoft executive confirmed during a private Comdex briefing that the company will likely ship a 64-bit version of NT "by the end of the century." He declined to provide specifics.

Analysts said a 64-bit version of Microsoft's enterprise operating system will be essential if NT is to compete with 64-bit Unix versions that have already begun to ship.

That urgency will intensify when Intel Corp. and Hewlett-Packard Co. deliver the so-called P7 processors, perhaps as early as 1997, according to Andrew Allison, an industry consultant and editor of "Inside the New Computer Industry," a newsletter in Carmel, Calif.

## Unified Unix?

HP's recent purchase of Unix from Novell, Inc. (see page 56) also means that a standardized 64-bit version of Unix will be out around the same time as the P7 chip, which is projected to ship sometime in 1997, Allison added.

Sun Microsystems, Inc., the volume leader in Unix workstations and servers, also recently

begin shipping 64-bit machines based on its UltraSPARC processors (see page 49). Observers said they expect a 64-bit version of Solaris after 1996.

"The reality of 64-bit NT is that Microsoft's ambitions re-

quire it to prevent 64-bit Unix from getting established," Allison said.

Several 64-bit microprocessors, including Digital Equipment Corp.'s Alpha and MIPS Technologies, Inc.'s R4000, have been available for several years. But virtually all systems today run with 32-bit operating systems, including Unix, OpenVMS and Windows NT.

## No user demand yet

"There's a technology drive for the vendors to get [their 64-bit operating systems] out early and establish a standard, but there's no pull from users yet," said Dwight Davis, editor of "Windows Watcher," an industry newsletter in Redmond, Wash. "I think people are in technology shock right now."

The merger of HP's PA-RISC design into Intel's processor design promises to accelerate the widespread adoption of 64-bit technology and spur the demand for 64-bit operating systems. Digital and Silicon Graphics, Inc., which owns MIPS Technologies, offer 64-bit Unix versions, but so far there is little demand for them, Allison said.

"I'm all for [64-bit] because everybody wants to go as fast as they can," said Tim Rice, computer-aided design manager and network administrator at Loschky Marquardt & Nesholm Architects in Seattle. "But it's not a must-have. Microsoft is just going to continue to add features and so is everybody else."

Microsoft now has two NT versions in the offing:

- The first is referred to as the "shell update" because it will add Microsoft's Windows 95 user interface—but not much else—to the current version of NT. It is slated to enter beta testing during the first quarter of 1996, said Rich Tong, Microsoft general manager for corporate and network systems.

- Following that will be a major release of NT, code-named Cairo, which will add an object-oriented file system and other features for distributed computing support. Cairo is scheduled to enter beta testing late next year, and most observers said they expect it to ship in 1997.

Much of the attention recently garnered by 64-bit systems has resulted from the performance increases touted by Microsoft archival Oracle Corp. and its close partner Digital.

Microsoft and Digital recently announced a broad agreement to collaborate on technologies for NT, so it is reasonable to conclude that Digital's 64-bit systems expertise will aid Microsoft's efforts, Allison said.

## Show time at Comdex



The usual goofiness prevailed at Comdex/Fall '95 in Las Vegas last week as more than 225,000 of the desktop faithful descended on the gambler's paradise. The annual MicroCrash chili cook-off—with all proceeds going to help missing and exploited children—brought out the misanthropic spirit at Kingston Tech (top photo). The boys in the band are (from left) Bob Bariola, Kevin Maher, Roger Peller and Garry Curtis. Their soprano visitor is Denise Kaller from the McCann Erickson ad agency. The middle photo shows that there was no escaping the gambling motif. And for those who prefer to deal with life from behind the wheel, one vendor was happy to comply with race car viewing stations.

# Workstations under attack

PC makers launch an offensive

By Julianne Vlyachin

In a flurry of product announcements and technology demonstrations at Comdex/Fall '95 last week, several PC vendors gave users their first glimpse of an emerging breed of relatively low-cost, workstation-class desktop systems.

Based on Intel Corp.'s recently announced Pentium Pro chip and Microsoft Corp.'s Windows NT operating system, the "personal workstations" combine elements of a predominantly

PC-based architecture with performance-boosting system designs.

The workstations include features such as advanced memory architectures, faster system throughput, greater expandability, network connectivity and high-end graphics capabilities.

Expected to ship by the first quarter of next year, the systems are targeting the traditional workstation market occupied by vendors such as Sun Microsystems, Inc., Hewlett-Packard Co. and Silicon Graphics, Inc.

Typical prices start at around \$4,900, so they will cost almost twice as much as low-cost PCs.

Among the major PC vendors demonstrating early versions of such workstations at Comdex were HP, IBM, Dell Computer Corp. and AST Research Inc.

In October, Digital Equipment Corp. announced similar personal workstations that run Windows NT. The systems feature an Alpha processor daughter card that users can plug in for a power boost.

HP and Sun beef up their workstations. See page 49.

# IBM, HP revamp for distributed networks

By Patrick Dryden

LAS VEGAS

Network computing arrived at Comdex/Fall '95 last week with enterprise heavyweights IBM and Hewlett-Packard Co. jostling for attention over who can better deliver on the promise of a distributed future.

Both old guard vendors are overhauling themselves to adapt to distributed computing demands from remote and small-office users as well as the vaulted enterprise environments.

IBM will get there by betting on a new computing model in which cheap workstations easily pull applets and information from diverse sources across the Internet (see story, page 14). HP will get there by demanding that its computing product divisions collaborate for the good of interconnected workgroups.

"I'm glad to see progress made toward making networking simpler, but these promises sound like more of the same in terms of vendor-specific integration and management efforts," said Rich Roffey,

director of information systems at the Guggenheim Museum in New York.

"My concern is that they will try to differentiate themselves by their own approaches."

While IBM and HP have validated "the computer industry equivalent of motherhood and apple pie," neither has succeeded at the workgroup level so far, said Jamie Lewis, president of The Burton Group, Inc. in Salt Lake City.

"IBM has never been known for leadership with LANs and small users," Lewis said. The company's entire future is based on the Distributed Computing Environment (DCE) model, which couldn't succeed as a mainstream network computing foundation, he said.

## Missing the mark

IBM has often missed the mass networking market because it is slow to deliver hot products or loses buyers with "a grand and glorious architecture, beset by DCE with objects," said David Pasmori, president of Decisive, Inc., a network consultancy in Sterling, Va.

But IBM takes network-centric computing seriously and is betting much of its future on the model, Chairman Louis V. Gerstner told Comdex attendees.

"IBM is really hot on Web services for the future," said Frank Drabek, president of Communications Network Architects, Inc., a consultancy in Washington. Drabek said IBM is taking steps to keep World Wide Web servers open and is developing MVS-based software so mainframe transaction processing will be easily accessible across the Internet.

No matter what the link — LAN, backbone or Internet — interconnected workgroups will form the foundation of the

new information infrastructure, HP officially asserted last week.

To simplify workgroup tasks in shared environments of any size, one-separate HP divisions have been reorganized to

cooperate for networkability, said Gary McAnally, manager of HP's Networks Division in Roseville, Calif.

Other projects under way at HP will integrate printer management tools with

the OpenView network management platform, add fax systems to the sharing of printers and scanners, and expand output management options throughout extended networks, officials said.

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NOVEMBER 20, 1995 COMPUTERWORLD

## News

# PowerPC for OS/2 to hit desktops in January

By Lisa Flearle  
SAR VEGAS

At last week's Comdex/Fall '95, IBM outlined plans to beef up the OS/2 family after once again expressing its commitment to the 32-bit operating system.

First on the delivery schedule in January shipment of the long overdue PowerPC version of OS/2, followed by first-quarter delivery of OS/2 Warp Server. By mid-1996, IBM plans to ship Merlin, an updated version of OS/2

## Comdex/Fall '95

Warp Connect for Intel Corp. platforms, said John W. Thompson, general manager of IBM's Personal Software Products division in Austin, Texas.

OS/2 Warp Connect (PowerPC Edition) was due last June, and analysts have considered its delays black eye for IBM.

IBM introduced a line of PowerPC-based desktops and laptops without a desktop operating system in June, and users had to use IBM's AIX or rival Mi-

crosoft Corp.'s Windows NT.

One eager OS/2 user said he was very interested in the PowerPC version of OS/2. "I think it will help make the PowerPC a more viable platform," said Steven LeMay, an environmental software engineer at the University of Las Vegas Harry Reed Center for Environmental Studies.

The RISC, or PowerPC, version of OS/2 is the functional equivalent of the current Intel version of OS/2

Warp Connect, but there are some changes under the hood. The PowerPC product in the version of OS/2 that will be based on IBM's recently released Microkernel. IBM plans eventually to include the Microkernel in all versions of OS/2.

IBM also plans to deliver a new Intel version of OS/2 Warp Connect in mid-1996. Code-named Merlin, it will feature a glitzier and more customizable interface, beefed-up Internet access, more drag-and-drop

features and a utility that streamlines installation.

Merlin also is expected to offer improved I/O output performance. The Developer API Extensions to simplify writing applications for OS/2 and Windows 95, and support for OpenDoc. To satisfy its broad-based enterprise customers, IBM is readying OS/2 Warp Server, which melds the features of OS/2 Warp Connect and IBM's LAN Server 4.0 operating system. Analysts said OS/2 Warp Server due out in the first quarter of next year, is a key weapon in IBM's arsenal for fighting off encroachment from Windows NT in the server space.

According to International Data Corp., a market research firm in Framingham, Mass., OS/2 LAN Server 4.0 increased its market share to 15% this year, up from 9% last year. Thompson said OS/2 Warp Server has expanded its file and print capabilities and is also working on enhancing its application server functionality.

## IBM serves up many flavors of OS/2

### Product description

#### OS/2 Version 3.0

Positioned as a powerful operating system for business users.

#### OS/2 Warp (with Windows)

The updated version of OS/2 3.0 marketed to consumers and home users.

#### OS/2 Warp (without Windows)

A revision of Warp with added features for making it a better client on a network.

#### OS/2 Warp Connect (with Windows)

A revision of Warp with added features for making it a better client on a network.

#### OS/2 Warp Connect (without Windows)

A revision of Warp with added features for making it a better client on a network.

#### OS/2 LAN Server 4.0

The server version of OS/2.

#### Just Add Warp

OS/2 Warp with a utility to install Windows 95.

#### OS/2 Warp Connect Version 2.0

A new version of OS/2 Warp Connect with Developer API Extensions to write OS/2 and Windows applications, OpenDoc support and a slightly jazzed-up user interface.

#### OS/2 Warp LAN Server

The melding of OS/2 Warp and LAN Server 4.0.

#### OS/2 Warp Connect (PowerPC edition)

The RISC-based version of OS/2 designed for the PowerPC chip. It is the first version of OS/2 to support the IBM Microkernel architecture.

# Users yawn at 'net appliances

By Jaikumar Vijayan  
SAR VEGAS

Despite the noise level at last week's Comdex/Fall '95, many users and a majority of PC vendors seemed less than overwhelmed by the concept of a \$500 stripped-down Internet PC and bare-bones browsers for the World Wide Web.

The booming growth of the Internet and other on-line services has pushed a small but vocal group of vendors to champion the notion of low-cost, dialless PCs and Web browsers. They contend such "intelligent appliances" would let users download programs as needed, work with public and personal data stored remotely, access on-line services, send electronic messages, download video clips and perform other tasks.

The applications for such machines would be signed on a network rather than on the machine. By cutting down on disk drives, storage devices and costly operating systems, vendors could keep prices at around \$500.

IBM Chairman Louis V. Gerstner stepped forward as a major proponent of the idea at Comdex. Users wouldn't have to upgrade their computer hardware or software because the equipment is obsolete, Gerstner said, and the network service provider would have to assume responsibility for updating the software and applications.

Still, many users, vendors and industry analysts reacted to the concept with muted enthusiasm.

"I don't agree with the idea of an Internet toaster," said the vice president of distributed systems management at a major New York brokerage, who requested anonymity. "Why pay for what functionally is just an X Window [system] terminal, when for a bit more you can off-load work from the server? I don't see these devices taking off, even in the home market."

Kevin Crouse, manager of software development at Shift4 Corp., added, "These devices make sense when you are using [them] in situations where there is only inputting and out-

putting of data and no actual manipulation of data." Shift4 is a credit-card verification company in Irvine, Calif.

The dependency and control imposed by the proposed platform also bothered some users. "Sounds like a loser to me," said Dan Katz, a software developer at TKO Software, Inc. in St. Anselmo, Calif.

Analysts said the concept of such low-cost devices runs counter to recent trends where consumers have been buying more expensive, high-performance systems.

One instance of the \$500 PC device is Oracle Corp.'s recent revelation that it is building a low-cost PC using RISC chips from Advanced Risc Machines Corp., a Japanese vendor. The device will include a keyboard, flat-panel monochrome screen, modem and mouse. Oracle's prototype loads an operating system of less than 1M byte in size from a network server and runs it on a RISC processor.

**EW Editor:** Paul Gilin burns 'net toasters. See page 34.



Butterball's World Wide Web site has been dubbed "The one place where turkey trivia is served." Users can go to the site and cooking tips at the site, as well as answer turkey trivia questions.

## Turkey Day

CONTINUED FROM COVER 1

ing go hand in hand."

At the site (<http://www.butterball.com>), users can get cooking tips and recipes, play turkey trivia, listen to sound clips of a live turkey and send questions to turkey cooking experts such as Mary Clingan.

Clingman, who also answers

the Turkey Talk Line, responds to electronic-mail questions about the different ways to cook a turkey.

One caller even asked how to free her Chihuahua, which was trapped in the body cavity of a turkey.

Although the Turkey Talk Line has been around for 15 years — receiving 191,000 calls last year — this is the first time Butterball has gone on the Internet.



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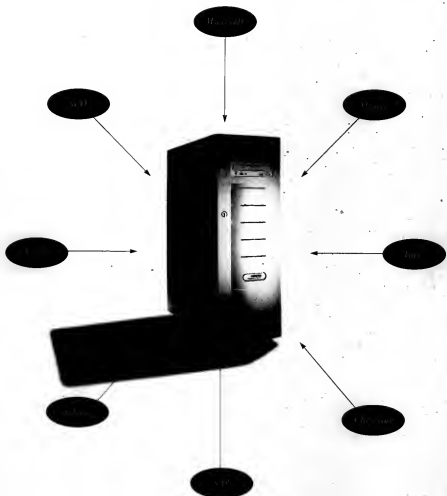


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Has It Changed Your Life Yet?

# Web causes pricing puzzlement

By Tim Ouellette

As attendees saw at last week's Comdex/Fall 95, the World Wide Web is making software vendors rethink their traditional pricing strategies.

That is because while the number of

Web users is increasing, there is no way to estimate how many users will access a vendor's Web-enabled software. Most software is priced on the traditional per-user basis.

"You are not selling seats anymore," said Gerry Murray, an analyst at Interna-

tional Data Corp. in Framingham, Mass. "Users don't know exactly when they are accessing a Web document through the server portion of a software package."

Vendors have taken several approaches. Sybase, Inc. last week announced flat-fee pricing for unlimited Web access

to its SQL Server database software. Sarco Corp. is still testing a variety of pricing models with customers before it ships its Mezzanine, document management software for Web documents.

Options for pricing models include transaction-based pricing or capacity-based pricing (see chart). Software that could be Web-enabled includes electronic forms software, groupware and fax and image servers, Murray said.

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### Pay the piper

Vendors must find a way to charge for their Web-enabled software

PRICING STRATEGY	DESCRIPTION
Per-user or concurrent user	Traditional pricing; doesn't address the millions of users on the Web.
Transaction basis	Charges for each Web transaction; it requires metering of each transaction on the server.
Capacity basis	Flat price for certain level of support based on system size. Much like pricing for printers, which is based on pages printed per minute.

So far vendors seem to have had an easier time pricing client software than the server piece that interacts with the Web.

"We have to go with very aggressive, broad-based pricing on the client side. You have to remove as many barriers to entry as you can," said Brownell Chalmers, vice president of marketing at Ottawa-based JetForm Corp., an electronic forms software maker adding support for processing forms on the Web. "But on the server side, the whole industry is wrestling with it."

"The issue is that the traditional [pricing] models are based on having a well-defined domain and machine class or user number to access these services. The Internet breaks open that model with the possibility for thousands and thousands of users," said Mikael Wipperfleld, director for server product program management at Sybase.

### When it's hot, it's hot

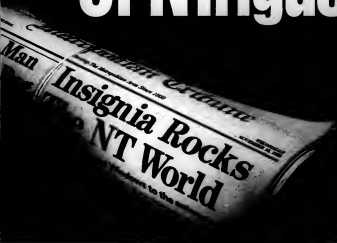
More than 80% of information systems managers said the Web is becoming a key part of their overall information technology strategy, according to a recent Dataquest, Inc. survey. That, in turn, is making applications with some form of Web integration very attractive.

"The Web opens up our business processes to do business with our customers however they want to do business," said Bob Nowak, director of work process automation at the Bank of Boston. Nowak said he plans to use JetForm's Web forms software.

A New Hampshire paper muzzies politics and the Web. See The Internet Page, page 62.



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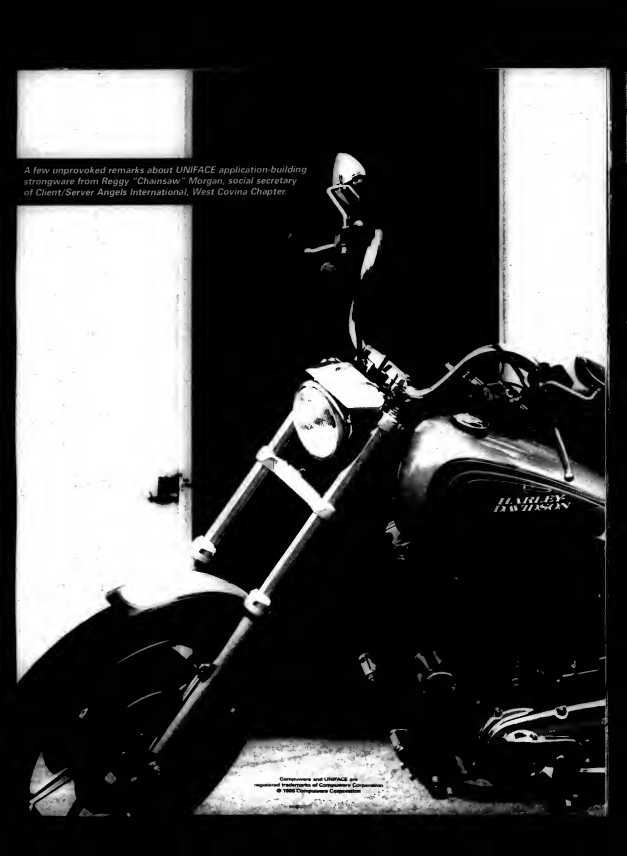
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*A few unprovoked remarks about UNIFACE application-building strongware from Reggy "Chainsaw" Morgan, social secretary of Client/Server Angels International, West Covina Chapter.*

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## News

# Telecom managers feel squeeze

By Neal Weinberg

The major information systems trends of the 1990s — downsizing, globalization, telecommuting and rapidly expanding use of the Internet — have one thing in common: They have made life far more

difficult for communications managers. So it's no wonder that "doing more with less" was the theme of the annual Communication Managers Association (CMA) Telecom '95 conference in New York last week.

"There are fewer of us, and there are

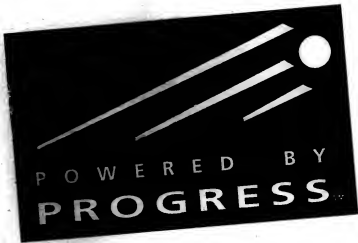
more demands," said Ronald E. West, senior manager of telecommunications and office automation at the New York law firm of Shearman and Sterling. "The industry is going through an evolutionary, and in some cases revolutionary, change." Lawyers at his firm, for exam-

ple, are looking to access their office files while they are at home or on the road. They also want Internet access, more intelligence on the desktop and improved connectivity to offices around the world.

The downsizing trend of the '90s has not only reduced IS staffs but also led companies to scale back their real estate investments, which means more people working at home, West said.

And now, telecommuters are looking

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A pager that connects to a data system so a manager can be called automatically when a systems problem occurs.

**Telaid Industries**  
Miami, Conn.

SoftBoard, a whiteboard connected to a PC that allows the storage and retrieval of hand-drawn color images. The company plans to add voice storage.

for advanced data services, such as the ability to instantaneously track global stock markets, and Donald Gaffney, manager of information technology at the New York office of Credit Suisse.

With Credit Suisse bank offices spread around the world, Gaffney has to find secure, reliable and cost-effective wide-area products.

For example, he has created a New York-to-London videoconference link over Integrated Services Digital Network so that application developers sitting at their desktops can collaborate in real time. That replaces mail.

Most communication managers are under the gun to move more information to more people and are trying to sort out the best way to do it. That is why conference sessions focused on high-speed transports such as frame relay and Asynchronous Transfer Mode (ATM).

The need for remote access has also led communication managers to make the transition from private networks to the public telecommunications infrastructure, said William L. Gewirtz, director of technical marketing at AT&T Corp. In addition, users are looking to carriers such as AT&T to manage their wide-area networks, Gewirtz said.

Still, many at the conference were less interested in the futuristic world of ATM and more focused on day-to-day problems.

Len Serin, a vice president at Bankers Trust Co. in New York, was looking at digital recording dictaphones that automatically record important phone calls.

Serin, a CMA Telecom veteran, noted how the show floor at the New York Hilton had more Internet access and networking vendors than in prior years.

**Outlining top talent** — some hints. See **Carriers**, page 113.



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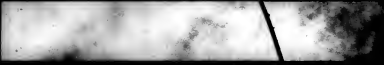
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other keeps running. If the power goes out entirely, a battery in each drawer enables data in cache to be written onto disk so it's not lost.

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## News

# User pressures mount on AOL

Popular on-line service to address billing, technical glitches

By Kim S. Nash

While profits at Vienna, Va.-based America Online, Inc. have steadily climbed, so has the ire of some users of the proprietary on-line service.

Pressures—some specific to America Online and some stemming from a notoriously competitive on-line market—have begun to grind on the 10-year-old firm, observers said last week.

The Usenet newsgroups all-online-service and alt-on-line-service.america-online, for example, are always chock-full of complaints. The most frequently cited items are unresponsive technical support, poor policing of chat rooms for subscribers who violate AOL user guidelines and unexplained network failures.

Cranky customers don't bode well for any company, but it can be especially dicey when they gripe on-line, users and analysts said.

"The din is getting louder, and that could turn off potential custom-

ers," one AOL user said last week. "Word travels fast on the information highway."

Time magazine's recent defection from AOL to Columbia, Ohio-based rival CompuServe, Inc. doesn't help.

CompuServe lured Time from AOL by guaranteeing it a minimum yearly income based on subscribers reading the publication on-line, acknowledged Steve Case, America Online's chief executive officer. In an interview last week, he declined to say how the company paid Time but said he is "absolutely not" rethinking America Online's compensation plans.

"We have more media partners than all the other on-line services combined," he said.

In an effort to dominate the on-line services market, AOL has pushed hard to expand partnerships, technological capabilities and its customer base. During the past year, for example, it has acquired seven services and

Internet firms and claims to have added roughly 2.75 million subscribers. AOL topped the 4 million subscriber mark early this month.

Yet that bid for greatness has punished existing customers, according to some AOL users—a charge Case acknowledges.

Last month, for instance, users nationwide were cut off from their electronic-mail services for several hours because of unspecified technical problems. But it wasn't the first time, several users said.

Elsewhere, many members have complained of billing mistakes in the company's favor.

"I've been on-line four years and have never seen the billing department in such a mess," one AOL loyalist said.

**Relief expected**  
Case acknowledged AOL has suffered "growing pains." He vowed to alleviate those pains by taking the following actions:

- Hire like crazy, primarily in billing and technical support.
- Move to a proprietary AOLNet network across the U.S. rather than rely on public data networks.
- Gradually replace proprietary

## America Online climbs

The acquisition of more than seven companies during AOL's fiscal year 1995, which ended June 30, took a toll on profits



AOL's CEO

Steve Case, says that despite system outages, the firm's fast-growth strategy is "the best course for all our members over the long run."

	Revenue	Profit
'93	\$52M	\$1.5M
'94	\$115.7M	\$2.6M
'95	\$394.1M	\$33.6M
'96	\$657M	\$37.6M

\*Estimated by Goldman Sachs & Co.

systems from Stratus Computer, Inc. and Tandem Computers, Inc. with Unix systems from Hewlett-Packard Co., Sun Microsystems, Inc. and others, which Case said are "more reliable and flexible."

But still looming for AOL and its on-line service competitors is the World Wide Web. Indeed, direct Internet access is increasingly appealing to individual users, which are the bread and butter of AOL.

Take Dave Piner, for example. The criminology major at the University of South Florida in Tampa dropped AOL for E-mail and other activities early this month, after several years

of membership, in favor of an Internet account.

"Time and time again, whatever I was doing [on AOL] could be done on the Internet cheaper and better," Piner said.

But AOL plans to fight back. Content tailored for AOL is easier and faster for users to get at than information on the Web, Case claimed. And AOL users can get on the Web via special browsers, he added.

"If anything, we complement the Internet," Case said.

At least he hopes so.

Microsoft will ship beta versions of its Internet tool kits next month. See page 62.

## No free lunches

**A** Trojan horse masquerading as a fancy new service from America Online will trash your hard drive if you execute it, the company warned its 4 million subscribers last week.

The rogue software, which resides in a file named "aol-gold.zip" attached to an E-mail message, was apparently confined to AOL last week. But it could do damage anywhere on the Internet, virus experts said.

There is no danger in reading the message, downloading the attached file or reading the embedded "readme" file, said William Orvis, a member of the Computer Incident Advisory Capability team at Lawrence Livermore National Laboratory in Livermore, Calif.

The "readme" file extols the virtues of a bogus service called "America Online Gold" and invites the user to install it via another infected file, "install.exe."

But if "install.exe" is executed, it will seek out and destroy a number of essential files on the computer's C drive, particularly targeting those in the AOL directory or even said. It finishes by printing "Y—Yes" on the screen.

Orvis said the deleted files are not written over and can be restored using the DOS Undelete command. He also said the Trojan horse was poorly written, with some features that apparently don't work. "Stay away from it and from anything claiming to be a fancy new front end to AOL," he advised. "It will do you grievous damage."

In its message to members, AOL said, "If you receive E-mail from unknown senders with an attached file, it is a good rule of thumb not to download the file." —Gary H. Aches

# Informix joins the pack with wireless communications

Firm to integrate New Era 2.0 with MobileWare 3.0 middleware

By Dan Richman

By May, mobile Informix users will be able to fax, send electronic mail, transfer files and connect to database servers, thanks to an agreement announced last week.

The pact between Informix Corp. in Menlo Park, Calif., and MobileWare Corp. in Dallas calls for the latter's MobileWare 3.0 connectivity middleware to be integrated with Informix's New Era 2.0 development environment.

Corporate developers will then be able to write Windows-based New Era applications that communicate with Informix databases through Microsoft Corp.'s Windows NT server.

Communication can happen over cellular or wired telephone lines or via Ethernet and Token Ring networks.

If a connection is broken in midtransmission, MobileWare ensures the integrity of the data and starts up where it left off when the connection is restored, the companies said. Queries can be launched in one session and responses collected later.

Informix is the last of the relational database management systems vendors to announce wireless communications, but the market hasn't passed it by, analysts said.

"Doctors and nurses, delivery men, salespeople, technicians on service calls—the potential

market for mobile computing is vast, and it's going to balloon over the next year," said Dan Morman, an analyst at IHS Strategic Decisions in Norwalk, Mass.

The agreement, which also calls for Informix to purchase between 5% and 10% of MobileWare, was signed Nov. 2 but only announced last Monday.

Third-party vendors seem particularly interested. "One of the mandates I've had is to let people use our sales tools remotely," said Devan Dewey, manager of information service at Segue Software, Inc. in Newton, Mass., which sells automated testing software. "A mobile Informix client would take care of this challenge."





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# Computer Industry

## Packard Bell, Compaq head for showdown

Ethics of reselling 'refurbished' PCs is the focus of vendors' dueling lawsuits

By Tim Orellette  
and Jinkumar Vijayan

Let those who are without sin cast the first stone.

That was Packard Bell Electronics, Inc.'s sermon last week as it dug up dirt on rival PC maker Compaq Computer Corp.

Compaq had targeted its Sacramento, Calif.-based rival with a lawsuit that accused Packard Bell of selling PCs with used parts and pretending they were new. Packard Bell last week struck back with documents unseized by the court that appear to dramatically turn the tables on Compaq's accusations. The documents were part of a counter-suit Packard Bell filed last month.

### Laundry list

The potentially embarrassing 12-page document provides "a detailed description of a re-packaging program, whereby Compaq disabled its distributors to get returns, repackaged them and resell them as new without any disassembly," said Marshall Grossman, a partner in the Los Angeles law firm Alschuler, Grossman & Pines who represents Packard Bell.

Exhibit C of Packard Bell's counter-suit states that "Compaq inventoried its 'Network' of 'Marketing Partners' through financial penalties (primarily by imposing tight limits on returns and by charging stiff restocking fees) to insure the returned, used PCs as new." The document also mentions a software program Compaq provided to resellers that reloads software on to used PCs to make them look new.

According to the document, Compaq's screening process for returned PCs requires that employees look only at the outer shell of the PC and that a Compaq diagnostic test measures only whether the hard drive has had a certain amount of use. "At least up until sometime in 1988, Compaq's service department inventoried and mislabeled together both used and new spare parts so they were indistinguishable from one another," according to the document.

In response, Compaq barely blanched. "This is just hype to distract attention from the main issue in the case — Packard Bell's practice of taking returned and used products, disassembling them and then as-

sembling the parts again without disclosing that," said William Gossion, outside counsel for Compaq at Venable, Vutiger, Howard & Civiletti in Washington. "And we know of no such practice at Compaq."

"Compaq does provide boxes to resellers, but most computer manufacturers provide replacement packaging to the distribution channel," he said. "But we say you can't use this box to box used goods. To our knowledge and belief, people comply with that." Packard Bell admits that the some distributors Packard Bell accuses of reselling used computer machines also sell other brands, including Packard Bell.

### Common practice

Industry analysts have acknowledged that the practice of reselling used parts in PCs is done industrywide, but in most cases, the parts are either marked or sold at a discount or

Compaq and Packard Bell have traded barbs during the past year

### Pointing fingers

**NOVEMBER 1994**  
Compaq files an unfair competition lawsuit against Packard Bell, claiming the company resells used computer parts without consumer's knowledge

**APRIL 1995**  
Packard Bell countersues, claiming Compaq defamed its reputation, hurt sales and misrepresented its own sales practices regarding used parts

**OCTOBER 1995**  
Packard Bell countersues, claiming Compaq defamed its reputation, hurt sales and misrepresented its own sales practices regarding used parts

**NOVEMBER 1995**  
Court releases previously sealed documents, which accuse Compaq of actively assisting its distributors to resell used computers as new

**JULY 1995**  
Packard Bell settles several class action suits filed as a result of Compaq's lawsuit

**FEBRUARY 1996**  
"Used parts" lawsuit goes to trial in U.S. District Court in Delaware

Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb

outlet stores. Costcon had previously stated that "Compaq's process for handling computer returns is exemplary and a model for the rest of the industry."

Compaq officials have said the company's sells returned, used computers as "refurbished" through resellers and its Compaq Works chain of stores. Machines that are returned in unopened boxes, and can be verified as unused, are sold as new.

Robert Stephenson, head of IBM's PC Co., admitted that IBM sells PCs with used parts. But he said the company indicates very clearly on the box that the parts are used or "equivalent to new" based on tests of the parts.

Compaq spokespeople have said its lawsuit was an attempt to keep Packard Bell from unfairly selling used PCs. Packard Bell claims its response is due to the financial losses it has suffered as a result of Compaq's

claims (see chart).

Compaq's lawsuit generated several investigations by the federal and state governments and class action suits by users against Packard Bell. These were settled with Packard Bell draping its guilt but agreeing to provide extended warranties to affected users and reimburse some users for a portion of the cost of any related repairs.

Grossman said he has learned that Florida, as a result of last week's announcement, will open an investigation into Compaq's practices to coincide with its investigation of Packard Bell.

This all works to make February a very hot month in Delaware, where the two PC makers will go to trial to settle their differences. Bruce Stephen, an analyst at International Data Corp. in Framingham, Mass., said last week's announcement was just more of the same between the two PC makers.

### Briefs

#### CrossComm revamps

CrossComm Corp. in Marlboro, Mass., plans to restructure marketing and engineering efforts to focus on the value-added reseller channel, recording a \$6 million charge against fourth-quarter earnings in the process. The networking vendor will cut some positions and focus its product lines on Ethernet switching, routing and asynchronous Transfer Mode products.

#### It's IPO week!

Among those making initial public offerings (IPO) this week are Sync Research,

Inc. (SYNO), with 3.9 million shares of common stock at \$20 per share; Clarify, Inc. (CLFY), with 2 million shares of common stock at \$15 per share; Advent Software, Inc. (ADVS), with 2 million shares of common stock at \$16 per share; Lexmark International Corp., with more than 12 million shares at \$20 per share; Shiva Corp., with 2.5 million shares of its common stock at \$70.25 per share; and Houston-based LDMs, Inc., with 2.5 million American Deposit Shares at \$10 per share. MetaBooks, Inc., formerly HSC Software, filed for an IPO of 2.5 million shares with an anticipated price of between \$5 and \$10 per share.

## StorageTek plans layoffs, cutbacks

Reacting to a string of disappointing profits, Storage Technology Corp.'s board of directors last week approved plans to cut its workforce by 15% during the next 12 months. The Louisville, Colo., company said it also will close facilities and dispose of some unidentified ancillary businesses.

StorageTek's restructuring "was long overdue," said Gary Helmg, a securities analyst at Soundview Financial Group

in Stamford, Conn.

"By just about any [financial] measure, StorageTek wasn't performing the way it should have, given its market position in the tape library business," he added.

### In the cards

StorageTek, which dominates the mainframe tape market, had said cutbacks were being considered [CW, Oct. 16]. The company is eliminating 1,500 of

its 10,000 jobs and it will also close its Logansport, Colo., manufacturing plant by early 1997.

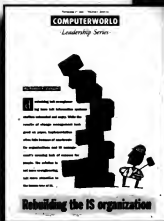
The businesses that will be eliminated in the restructuring haven't been finalized yet, a StorageTek spokesman said.

The company's main tape, disk, networking and software units will remain in the fold, although they will get "perhaps a sharper focus in the future," he added.

—Craig Stedman

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Downsizing, restructuring and re-engineering have left IS staffers frazzled and frustrated. The problem is not with the restructuring or with the quality of the people, but with the organizational structure itself. Before prescribing yet more re-engineering, CIOs need to rethink the way work gets done, taking into account the personality traits of their employees. Robert Zawacki, this month's Leadership Series author, describes the steps IS managers need to take to reenergize their people and rebuild the IS organization.

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## ISDN disconnect

The idea of an inexpensive "information appliance" connected to the Internet has captured the industry's imagination almost overnight.

But I think that in all the talk about the \$300, \$400, \$500 devices or whatever such "net-connected" appliances will cost, one number is being overlooked. That number is 28,800, or the number of bits an average high-end modem can blast over a telephone line.

The 28.8K bit/sec. speed is barely enough for Web surfing today. It will be woefully inadequate as data-rich technologies such as Sun's Java and Virtual Reality Markup Language hit during the next year. Information appliances won't take off unless they can deliver the goods faster than 28.8K bit/sec.

That's OK, industry leaders say. We'll just get Integrated Services Digital Network (ISDN), which delivers two to four times the speed and virtually eliminates call setup and disconnection times. Right?

I guess so, if you live in Northern California like most industry leaders do. Unfortunately, a lot of people still don't have access to ISDN, much less the money to buy it.

Out of curiosity, I recently contacted my local carrier, Nynex, to see about getting home ISDN access. When my call was returned eight days later, I asked if my home in a suburb about 25 miles west of Boston would be able to use ISDN. No, a Nynex representative said, not now and probably not ever. I could get something called virtual ISDN, but that would require about \$1,000 in hardware and an extended and expensive visit from a Nynex technician to install the line. In effect, she told me not to bother.

If this were just my experience, it would be one thing. But I've heard and read similar or worse stories from many other people. I bet you have, too.

Information appliances will take off when high-speed communication is easily available at low cost. That process is moving slowly at best. For better or worse, we're stuck with PCs for some time to come.

*Paul Gillin*

Paul Gillin, Editor  
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## Viewpoint



## Another resource for job seekers

A few weeks ago when *Computerworld* focused on World Wide Web career resources on the Internet Page (<http://http://On-line.computerworld.com>), I without mentioning our Software Jobs Home Page (<http://www.computerworld.com/swjobs>), I could sense my boss' silent rage. Now that

another article has come out that mentions two excellent software career-related bulletin board services (BBS), but, alas, not our own National Software Search and Placement BBS, I'm seeing if I can get my network connection extended out into the hallway. Need any help con-

ducting your Internet re-

*Daniel Canale-Parola  
Internet coordinator—  
webmaster  
Software Jobs Home Page  
Allen Davis & Associates  
Amherst, Mass.  
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## Intel, not users, benefits from DG action

I read your article covering the North American Data General Users Group meeting with interest. ("DG's Intel move gets user nod," *CW*, Oct. 16)

First, I have Avion (AV) equipment, not MV Second, it is going to be even more difficult to get software for the Motorola 88000-based Avions. But I think the move to Intel will be a good thing. It would be even harder to get software for those old machines. If DG were to go out of business entirely,

This leaves users who have a few years left on their licenses in a quandary. Should they upgrade now or try to hang on to the older systems?

I'll bet that something similar will happen when Intel's P7 chip comes out. It is supposed to run Intel and Hewlett-Packard PA-RISC code directly. But what about all the other HP owners who don't run Intel code? They will be in the same boat as the current 88K-byte Avion customers—waiting for new software to be released on the non-Intel platform. The only difference is that HP could continue develop-

ing on PA-RISC, while DG has to develop on both chips in parallel.

So it seems that DG has chosen to double up on software expense, while HP has thrown its money behind a new piece of hardware. The only real winner in all of this is Intel.

*Eric Haskin  
The Listworks Corp.  
Pleasantville, New York  
listwork@netnet.net*

## Time for industry press to wake up

Novell has taken the road to "dumb" old apps and, in your opinion, conceded the desktop to Microsoft's "Desktop drinks." *CW*, Nov. 6]. But whose fault is it? I think it's the computer press, which has given Microsoft an unwarranted free ride. I see no hue and cry from the press about competition until the competition and innovation are already dead in the marketplace.

The reason many magazines

have so little to write about is their disinterest in any application or system that doesn't run under the Microsoft label.

Take Intel's decision to hold Pentium Pro until 32-bit Windows was ready. There are other 32- and 64-bit operating systems out there, such as Unix, OS/2 and QNX, that could run fabulously under the P6. But you are too biased to ask Intel, a Microsoft partner, about that.

We consumers are left with a homogenized solution for an operating system/office suite/complex. If you aren't going to take Microsoft to task before the competition comes operations, will you do so afterward?

*Mike Niemi  
President  
Esaymilit Software Co.  
Milwaukee*

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## Verbatim

FROM A STATEMENT BY DAVID W. WIDGER, A PROFESSOR AT PENNSYLVANIA STATE UNIVERSITY AND AUTHOR OF "The Emperor's Virtual Clothes: The Naked Truth about Internet Culture."

Most of what's being predicted or touted about the Internet is an exaggeration. It's neither as wonderful as its proponents claim, nor as horrifying as its critics believe.

What I've found is that the Internet is not going to change who we are, the way we think and the way we learn, or change the essential way that we communicate, much less transform our culture, alter the political process or rearrange the balance of world power.

Despite all the wildcards, downloads and list servers in the world, we are still going to be the same human beings—the same contentious, territorial, ridiculous, lovely, precocious nattering voos.

FROM A STATEMENT BY ALAN S. BLUMER, VICE CHAIRMAN OF THE FEDERAL RESERVE BOARD, ON THE REGULATORY IMPLICATIONS OF DIGITAL CASH:

As with other payment mechanisms, issuers and holders of electronic currency take on some degree of ongoing credit, liquidity and operational risks. [For example,] cards might malfunction or be counterfeited.

If an issuer were to become bankrupt or insolvent, what would be the status of the claims represented by a balance on the [digital cash] card or other device?

When and how would funds be made available to the holder?

Another issue related to consumer protection is privacy. While physical cash leaves no audit trail, many electronic currency products would.

Such a trail may be desirable for certain purposes. But consumers would almost certainly be concerned if such purchases from a vending machine were recorded for possible reporting to regulators and others.

## Viewpoint

## The checkout line from hell

Roscoe Rant



**A cranky consumer unleashes a front-line report for builders of retail computer systems.**

**W**hat's your account number? The salesclerk looks up impatiently from the ancient VDT. Her words make my blood boil. How the hell do I know? I shout "It's your damn store! Can't you just look up my name?"

"Sir," she begins dryly, "our computer is organized by account number."

It's only 10 a.m., but already I'm more angry than a spivee shopper on Christmas day. I stomp across the strip mall to ring up my snapshot of the electronics store.

"That's \$2.69," the clerk says. Then she starts fidgeting. "Jimmy, I got no fives. How do I open your register without makin' a sale?"

She turns and confides to me: "These new computers here are terrible, just awful. Could I have your home phone and ZIP code, please?" "For a \$2.69 purchase?" I ask. "Besides, I gave my address last time I was here. I don't want another cup of your stapo exfoliating."

"Sir," she says, turning all snippy: "The new computer won't allow me to ring the sale unless I have your home address."

I slap down two bucks and a dime and grab my stuff. "Sale complete!" I say and march out. Now my head's pounding. So I stop at the megapharmacy to get more high blood-pressure pills.

Even though I have two refills to go, they say they can't fill it.

"I don't know about other drug stores," the pimply counter kid says, "but we don't use our computer system to transfer prescriptions between stores. We call."

As I'm paying for some antacid, the computerized register runs out of paper. So assistant manager "Ken" comes out. Five people ahead the next 40 minutes trying to put in a new roll of paper. I can connect to the State Seal Museum in outer Slovenia in 2.3 seconds over the Internet, but they can't make a cash register terminal that doesn't take a genius to know how to refill the paper.

A triple espresso calms my nerves a bit, and I head home to watch my favorite movie, *Fulling House*. The shooting's just started when the telephone rings. Some saku says he wants to do certain things with my wife's toes. I slam

down the receiver. "What the hell?!" I ask. Then it hits me. The video store uses one of those stupid computers that asks you to say your telephone number out loud so it can look up your account. This creep obviously heard my beloved giving our number at the checkout and decided to hit the play button.

And don't get me started on this new deal where items don't even have price tags on them.

What's so hard to understand here? I go into your establishment and give you money, loud, scratch, snuff, exfoliate, mow, jag, dimer, dimer. Your stupid computers shouldn't discourage or delay me or invade my privacy or otherwise cheese me off while I am attempting to do so, creep?

And if your employees think the new computer system is the dumbest thing since blue M&M's, next time build a freemitter one. In the meantime, teach people to smile and pretend they like it. (Tell them it's never development.) Smart, competent, know what I'm talking about. Maybe the rest of you should change your motto to, "The customer is always a fight."

Rant is an angry consumer. He might be one of your company's customers. You can send him mail to rant-of-pe\_maj@att.net.com.

## "Dream team" emerges for the future

Patricia B. Seybold



**The new world of net-centric computing may create some strange industry bedfellows.**

**A**sen change in the computer industry has resulted in several interesting mergers and spinoffs during the past year, and I expect the pace of mergers to accelerate.

Already, IBM has acquired Lotus to gain ground in network computing, and Netscape bought Collabra to move groupware into the World Wide Web. Microsoft acquired the technology of Network Managers and Netwise so it could offer more credible network management and connectivity. AT&T spun out its computer business to focus on its core networking products.

Novell sold its Unix and personal applications businesses to focus on groupware and networking.

There is a fundamental shift taking place toward network-centric computing and away from PC-centric computing and client/server computing as we know them. The gloves are coming off in the battle for mind share and market share. The lack is slippery, and the partnerships are becoming quite interesting. Just for fun, let's speculate about what likely and unlikely bedfellows might result from this new world order.

Microsoft tries to buy Netscape. Not willing to cede the desktop, Microsoft makes an interesting takeover bid for Netscape but is

thwarted by the U.S. Department of Justice. Motorola plays white knight: Acquires Netscape, teams with Apple. Motorola comes to Netscape's rescue, snapping up this hot Web player and extending Netscape's business from the wired Internet to the wireless world. Then, targeting consumer markets, Motorola creates a joint venture with Apple and puts Joe Guafelini (formerly of IBM and Taligent) in charge of it. He recruits Steve Jobs to design the next Motorola/Apple appliance for the home market.

San merges with AT&T. AT&T is determined to own the Internet business-to-business and business-to-consumer markets. Sun dominates the Internet server business and Sun's Java is becoming the de facto standard for developing distributed computing applications. Scott McNealy takes over AT&T's network software business, where the network

really is the computer. Sun's workstation business merges with AT&T GIS and is left to its own devices.

Oracle merges with TCI. Larry Ellison teams up with John Malone. Their mission: take over the cable TV market as it goes interactive and bring Web servers into every neighborhood.

Microsoft acquires ESI. Anxious to recast its global reach in network services, Microsoft pulls off the deal of the century to own one of the world's most successful and aggressive networking providers, Microsoft/ESI wins the coveted contract to wire China.

Digital merges with Novell. Digital's hangover with Microsoft is over. By acquiring the NetWare installed base, Digital buys itself another three years to regain its network computing franchise.

HP buys SCO. Finally, a unified Unix is in the offing. This collaboration makes it easier to develop a single Unix for Intel's P7 chip. It's a last-ditch attempt to block Microsoft's Windows NT from dominating the network service market.

Now you know what I dream about at night. How about you? What strange bedfellows do you foresee?

Seybold is president of Patricia Seybold Group in Houston. Her Internet address is pseybold@psgroup.com.

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# Desktop Computing

PCs AND SOFTWARE • PORTABLE COMPUTERS

*Comdex* FALL '95

## Newton: New and improved

Users laud handwriting recognition

By Lisa Picard  
LAS VEGAS

**T**he second iteration of Apple Computer, Inc.'s Newton operating system features improvements to the mobile unit's handwriting-recognition, organizational and communications capabilities.

### Top dogs

Apple has cashed No. 3 last year in the PDA market, selling 60,000 units. Fujitsu ranked second, selling 44,000 units. Hewlett-Packard Co. was on top, selling 106,000 units, according to Dataquest. The market research firm predicts that total worldwide unit shipments for handheld devices — which include organizers and PDAs — will reach 1 million units.

It was the Newton's handwriting-recognition features that made the first version of Apple's personal digital assistant (PDA) the butt of jokes in the comic strip *Doomsburg*, the television show *The Simpsons* and the computer industry itself.

Newton 2.0 was demonstrated here last week at Comdex/Fall '95. It runs on the Newton MessagePad 120, which was announced last January, and will be available at the beginning of next month.

The operating system features a slew of improvements, including beefed-up handwriting-recognition capabilities and two handwriting engines. The old cursive recognition offers better recognition rates and makes it easier for users to identify and correct words that were not recognized. The new engine recognizes hand printing.

In addition, Newton users can display information on

screen in portrait or landscape mode and switch between the two modes simply by tapping a button. Newton 2.0 also supports keyboard input via a serial port connection to the unit.

### A second look

"The ability to connect a keyboard and better handwriting recognition have made us take another hard look at how we could use the Newton," said Mark Munro, a systems ana-

lyst at Jack Morton Productions, Inc. The New York firm specializes in corporate videos and marketing materials and has more than 100 Macintoshes and five Newtons.

Other users agreed with Munro. "Right now, we are experimenting with using the Newton to transmit data from our factory technicians to their desktops. The improvements that have been made in 2.0 certainly meet our needs," said

Edward Krasnowski, a computer specialist at Savage Arms, a gun maker in Westfield, Mass.

One analyst applauded Apple's enhancements. "Apple has made great strides in making this easier to use," said Mike McGuire, an analyst at Dataquest, Inc., a market research firm in San Jose, Calif. "That should help a lot, but the Newton is still primarily a vertical market device."

— Apple has improved the Newton operating system in the following three areas:

### Organization

- When data is entered into one of the three applications (Address, Calendar and Notepad), the other two applications are automatically updated.
- The Notepad module includes new formats, such as checklists, outline and user-customizable stationery.
- A Call Log application has been added to track telephone calls by name and date. An auto-dialing feature is also included.

### Communications

- Users can now send and receive faxes. The first version lets users only send.
- Direct support for AppleLink and E-mail, including E World, which is an on-line service.
- The ability to send to groups rather than single addresses.
- A list of local-access numbers for Internet and on-line service providers.

### Connection

- A built-in software backup utility allows users to back up and restore files.
- Bundled with Newton Print, a software program that lets desktop users drag and drop information onto an icon. The icon can then be sent to Newton as a Newton Book. Users can open the Newton Book regardless of the application that created it.



## ExpressMeter keeps running tally of software usage, licenses

By Cheryl Gierber

Express Systems, Inc. last week began shipping the Windows 95 version of a license management program that could help information systems managers cut costs in large, networked installations.

ExpressMeter 3.1 supports Microsoft Corp. Windows 95 clients and the Windows 95 look and feel.

The new version provides a utility called Automatic Audit, supported by the Windows 95 application wizard, that helps automate the process of a auditing software usage.

Beta testers said the ease of use and the additional information provided by the utility

made it their favorite new feature.

"The new application wizard gives you an easier way to manage new applications and set all the parameters associated with them," said Joe Baker, a beta tester and computer operations administrator at HNTB Corp., an architectural engineering firm in Overland Park, Kan.

### App audit

The previous 16-bit version, ExpressMeter 3.0, provided only the executable names of applications, whereas the new utility in the 32-bit version offers more detailed information about installed applications, said Jason Peterson, a systems

engineer at Saturn Corp. in Spring Hill, Tenn., and a beta tester. "It steps you through all unregistered applications," he said.

The additional details could help Peterson and Baker get even better control of their software installations. Baker has already cut costs using a combination of ExpressMeter 3.0 and the beta version of ExpressMeter 3.1.

"With 50 clients, we were able to save somewhere between \$30,000 and \$40,000 in the past two years using this product," Baker said. "It shows peak usage so you can determine the appropriate number of licenses to purchase."

### Smart shopping

Beta testers said Express Systems' license management utility helps them save money by helping them figure out how many licenses of a particular desktop application to buy.

As a result, Baker said he has been able to focus his resources on purchasing hardware and not worry about the associated software costs.

ExpressMeter 3.1 also provides office suite metering, which can prevent managers from overbuying software. "Using suite metering, I can

balance my license purchases based on a combination of suite and stand-alone software. I may not need 200 office suite licenses, for example. I may need only 150 suite licenses and 50 stand-alone licenses," Peterson said.

Peterson said the Windows 95 client support was solid in the final beta release of this product.

"From a client standpoint, ExpressMeter registers any new application on a network. It will meter anything that is executed from anywhere — DOS, Windows 3.1, Windows 95 or Windows NT," he said.

ExpressMeter 3.1 is priced at \$495 for a server and costs \$10 to \$20 per node client.

## Desktop Computing

# Sales automation at your fingertips

By Stewart Deck

Wait, here's a good one. There's this traveling salesman, and he's trying to close a sale. His company updated the product and price list an hour ago, and he needs to get the new catalog onto his Windows-based laptop before he meets his customer.

Wait, there's more. The customer then decides he wants a completely different configuration than the one the salesman worked up pricing for.

Last week, Metropolis Software, Inc. in Palo Alto, Calif., unveiled Sales 4.0 software, designed to turn this scenario from a joke to a solvable problem. Sales 4.0 is Metropolis' first Windows-based venture — the company has been selling its Sales Synergy system to the Macintosh-based market for the past three years.

## Full of features

Sales 4.0 provides a suite of sales automation productivity modules (see chart).

The core application is the Opportunity Management System, which lets sales representatives update and manage all contact information for potential sales. Other salespeople and their managers can update their own listings by synchronizing through the Metropolis

Distribution Engine, the server application that runs on an Oracle Corp., Sybase, Inc. or other major relational database.

Storage Technology Corp. has installed the Metropolis system on Macintoshes in 25 district offices. Close to 360 people — sales reps, system engineers and customer support reps — are hooked into it.

The Louisville, Colo., company plans to "establish a world-

wide knowledge network for [its] support field sales" with links to Sales 4.0, said Scott French, manager of field automation. "The package gives our salesmen the ability to work off-line, deal in real time and synchronize," he said.

Jim Dickie, a market analyst and managing partner at Insight Technology Group, Inc. in Boulder, Colo., said the important issue in sales force automation is not efficiency but effectiveness. "It's not how to make more calls, but how to help the sales rep make better, more effective calls," he said.

However, Dickie cautioned, implementing an automated sales process doesn't solve everyone's problems. "If you automate a lousy process, you'll just be able to be more efficient at it, probably driving yourself out of business faster than you would have been able to before," he said.

## Metropolis Software's Sales 4.0 features the following modules:

**OPPORTUNITY MANAGEMENT SYSTEM:** Lets users manage their lists of potential sales targets, related accounts and contacts

**FORECASTING:** Lets users and managers review revenue forecasts, including sales opportunity information

**QUOTATIONS:** Lets users quote product prices and specs based on continually updated information

**CONFIGURATION INTERFACER:** An interface that lets users develop multiple configuration solutions for customers

**DISTRIBUTION ENGINE:** Lets users update new data from distributed sources

**MARKETING ENCYCLOPEDIA SYSTEM:** An interface to marketing information on the Internet or from the Distribution Engine

**ENTERPRISE GATEWAY:** Lets users manage all feeds of information, including legacy applications

# Tips for telecommuting

Successful insurance company offers advice to make it work

By Mandy Blodgett  
SANTA CLARA, CALIF.

The key to getting a successful telecommuting project off the ground is getting early and ironclad support from upper management for the project's goals and missions.

That was the lesson in a presentation by the Argon Insurance Group in Clearwater, Fla., at the recent Telecommute '96 conference here.

"My main message is that remote work can happen, that telecommuting can work," said Kim McConigle, Argon's telecommuting coordinator. "But you need a team effort, one person with vision can't do it. And



above all, you need an executive backer who is driving it. That is absolutely key."

McConigle said telecommuting helped with recruiting, but Argon's Chief Operating Officer and telecommuting champion

John Hurley said, real estate costs were the main reason the company launched a 17-worker telecommuting pilot. Rapid growth was leading to space constraints and rather than pay for more office real estate, it made sense to investigate having employees work from home, he said.

Hurley added that the telecommuting opportunity is particularly appealing to a pool of potential employees the insurance company wants to tap: retired executives in Florida.

Start-up costs for Argon's pilot were \$6,000 to \$8,000 per worker, with recurring costs estimated at about \$300 per month per worker. Most of the at-home workers are forms processors and data collectors. Argon declined to estimate cost savings.

## Dry run

One Argon innovation, which mandates workers must spend time in labs that simulate the at-home work environment before they can work at home, caught the attention of conference attendees. In the Argon model, a lab is a prototype of a typical home office, giving the worker a taste of the isolation they might experience at home.

This interested Peter Robinson, a real estate consultant in workplace services and corpo-

rate real estate for Ontario Hydro, a utility in Toronto. Robinson said his firm is launching three pilots of between 15 and 20 users each, primarily because of space constraints.

"But I am primarily interest-



ed in increasing productivity, in re-engaging the worker," Robinson said.

The play could pay off. Gil Gordon, a telecommuting analyst whose firm, Gil Gordon Associates in Monmouth Junction, N.J., sponsored the conference, said that while many companies use cost savings to sell telecommuting pilots to upper management, many studies show that telecommuters actually work harder and longer and are more productive than office workers.

"You don't have the interruption; you don't have the time stuck in traffic. You have more time," Gordon said.

# Microsoft chooses infrared standard for Windows 95

By Mandy Blodgett

Microsoft Corp. last week announced it has added support for the Infrared Data Association (IRDA) connectivity capability to Windows 95.

The software giant's announcement of the IRDA standard is likely to speed the technology's acceptance, industry observers said. Infrared technology wirelessly connects computers and peripheral devices, using the same principle behind remote controls for televisions.

While IRDA, a group of more than 120 computer, peripheral and telecommunications vendors, has released a set of standards that many notebook manufacturers have adopted, there is more than one infrared technology standard. Microsoft's

move should reduce confusion.

"Anytime Microsoft chooses something, it helps a technology," said Andrew Seybold, editor of *The Outlook on Communications and Computing* in Boulder Creek, Calif. "They have been sitting on the fence, but now they are helping the industry."

## Infrared

With Microsoft's announcement, PCs with Windows 95 can communicate with IRDA-compliant peripherals as well as other PCs and notebooks.

Vendors supporting IRDA include Compaq Computer Corp., Digital Equipment Corp., IBM, AST Research, Inc. and Intel Corp.

IRDA support software for Windows 95 will be included in future versions of Windows 95, but it can be downloaded from the Internet at no charge now.

## Briefs

### Oracle keeps mum

Oracle Corp. wouldn't comment on a report in *The Wall Street Journal* recently that it is talking to Apple Computer, Inc. about using the Newton operating system in the so-called network appliances being championed by Oracle Chief Executive Officer Larry Ellison.

At an event in September, he implied no such talks were under way. An Oracle spokesman last week said even if the talks are going on, what Ellison really intends is to create an application programming interface to which multiple hardware vendors could write.

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## Briefs

## PC Card debuts

Megahertz, the Mobile Communications Division of U.S. Robotics, Inc., last week announced the AllPoint Wireless PC Card for notebooks and handheld computers. The 640K card will operate over the RAM Mobile Data USA L.P. radio network. It will offer the PC Card, Radio-Mall and Wynd Communications Corp. software, which provides gateway access to the RAM Mobile Data network. The PC Card doesn't require cables and will allow computers to fax, send and receive electronic mail, access databases, transfer files and access headline news and stock quotes.

## Group rolls out API

The Sabatino Connection, a group of vendors working to help different kinds of office machines talk

to one another, has released an open application programming interface. Called the Sabatino specification, it will let copiers, printers, personal digital assistants and fax machines tell one another where they are on the network. In addition, IBM, a founding member of the consortium, announced the Sabatino Manager, the first product to support the Sabatino architecture. It is a tool kit that will let developers Sabatino-enable their products.

## Mapinfo adds add-on

Mapinfo Corp., in Troy, N.Y., recently announced an add-on kit for the Data Map mapping feature in Microsoft Corp.'s Excel spreadsheet and Office for Windows 95. The add-on product—cramped onto a single CD-ROM for \$99—includes extensive data sets and multi-applications called Mapplot for demographic and territory analysis.

## Desktop Computing

# Lightship software puts spotlight on data trends

## Tool helps users pinpoint useful data

By Dan Richman

Pilot Software, Inc. in Cambridge, Mass., recently announced it will build sophisticated data-analysis features in its Lightship decision-support software.

With these data-analysis features, customers can drill in to data to find new trends and sometimes even predict the future, the company said. Companies typically hire trained statisticians to do this type of work, which is sometimes called data mining.

Users said built-in data mining would give them a valuable tool for looking at corporate data.

"A lot of people think they un-

derstand trends in their data, but technology like data mining could identify trends that people didn't even have hinkings about," said George Kiesel, a consultant for Monsanto Co. in St. Louis.

### Data mining

Sieve Page, a project leader at AT&T Global Procurement in Greensboro, N.C., who is also familiar with on-line analytical processing, said data mining features could help his group trim a 10,000-name supplier list. The group plans to determine which suppliers have consistently offered the best prices and service.

"I don't expect the software to actually make decisions for us, but if it can even help us narrow down the choices, it would be

helpful," he said.

Six engineers who left struggling Thinking Machines, Inc. in Cambridge, Mass., are lending the effort to create the Data Mining Engine, an add-on to the Lightship server.

When the engine and several associated interface additions start shipping by mid-1996, they will let companies analyze databases as large as 300G bytes, said John Fleming, Pilot's vice president of marketing.

Pricing for the engine, which will run under Windows and Unix, hasn't been set, but it will be less than \$100,000, Fleming said. The interface additions, which run under Windows, will list for \$500 to \$1,000 per user.

Fleming said SAS Institute, Inc. in Cary, N.C., and Information Harvesting, Inc. in Cambridge, Mass., offer comparable products.

To get real-time broadcast-quality video, sound and data on multiple



Photo is a composite of three images.



## Desktop Computing

45

Desktop Computing

Kantek, Inc. has introduced Spectrum 3D Wireless RingMouse 1.5.

According to the East Rockaway, N.Y., company, Spectrum 3D Wireless RingMouse 1.5 is a wireless mouse alternative that uses ultrasonic and infrared technology to move the cursor around a screen. The dual oper-



Kantek's Wireless RingMouse 1.5

ating device also lets users work simultaneously with a standard mouse and a RingMouse. It can operate up to 3 feet away from the screen.

Spectrum 3D Wireless RingMouse 1.5 can also emulate a joystick for game playing. When used with three-dimensional software, it can move an object

up, down and across the screen as well as into and behind objects. It is compatible with Microsoft Corp.'s Windows 95.

Spectrum 3D Wireless RingMouse 1.5 costs \$99.

► **Kantek**  
(516) 593-3212

Panther Software has introduced Office Central, a Windows organization application.

According to the Hermosa Beach, Calif., company, users can organize files by creating folders according to subject and placing files in folders. They can then preview the file contents. Office Central also lets users view multiple application files simultaneously without starting the application.

Office Central lets users search for files with a single word or multiple words. It then displays the file name and folder where the file resides. It allows long file names and lets users move or copy files between folders without making duplicate copies on hard drives.

Office Central costs \$49.

► **Panther Software**  
(310) 372-6906

Tandberg Data, Inc. has introduced Panther Mini 4800, a mini-cartridge product.

According to the Simi Valley, Calif., company, Panther Mini 4800 is a 39-in. minicartridge product with a 4.6G-byte storage capacity designed for PC and server applications.

Panther Mini 4800 includes a SCSI-2 tape drive, a data cartridge and Arcadia Software, Inc.'s Backup for DOS, Windows and Microsoft Corp.'s Windows 95 software with data compression, cables and manuals.

Panther Mini 4800 is available in internal and external configurations for \$649 and \$739, respectively.

► **Tandberg Data**  
(805) 579-1000

DocuMagix, Inc. has unveiled PaperMaster 2.0, personal paper management software.

According to the San Jose, Calif., company, PaperMaster 2.0 helps PC users organize paper and electronic information into personalized filing cabinets, drawers and folders. It lets users file, fax, copy, search, annotate, edit and electronically

mail documents. It also lets users create and share file cabinets over a network or any removable media.

PaperMaster 2.0 includes an autocropping feature that discards excess blank spaces around documents' edges and a straightening feature that aligns documents scanned at an angle. Users can also combine individual pages from multiple sources into one document.

The software requires a 486 processor or higher and 8M bytes of RAM.

PaperMaster 2.0 costs \$99.

► **DocuMagix**  
(408) 434-1138

TouchStone Software Corp. has introduced PC-cillin 95, an antivirus utility.

According to the Huntington Beach, Calif., company, PC-cillin 95 provides a complete system of antivirus features designed to protect Windows systems from new virus sources.

PC-cillin 95 was designed to automatically adjust virus protection levels based on potential threats. If a system is infected, a Virus Watch Alert increases

the system's defense to combat reinfection.

It also detects and eliminates unknown viruses, scans Internet transfers and electronic-mail attachments and updates virus protection with virus pattern updates.

Users can update their virus pattern database by connecting to TouchStone Software's bulletin board service or World Wide Web site.

PC-cillin is fully compatible with Microsoft Corp.'s Windows 95 and costs \$59.

► **TouchStone Software**  
(714) 959-7746

Kiwi Computer, Inc. has unveiled its low-end, Intel Corp. Pentium-based multimedia laptop computers.

According to the Santa Clara, Calif., company, the 6th-gen laptops use 75- to 133-MHz Pentiums and have 10.4-in. screens, 8M bytes of RAM and removable 540M-byte hard drives.

The laptops will be available by January. Prices range from \$1,999 to \$3,999.

► **Kiwi Computer**  
(408) 492-9188

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Of course, there's more to this notebook than long battery life. The XP's active-matrix SVGA color screen can display up to 50 percent more information at up to 800x600 resolution. Along with 15MB of RAM and a 1.2GB hard drive, it helps you get the most out of every minute of the battery's power.

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Keycode #12077

2:24 PM

10,000-page run under way.

2:25 PM

Printer speaks to you in strange new language.

ER uppp ER uppp ER uppp ER

2:26 PM

Call service supplier and try not to panic.

5:16 PM


Service guy finally arrives.

5:59 PM

Can't help, he says, it's a network thing.

6:00 PM

Panic. Visualize IBM printers to calm down.



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VINES USERS GET  
ROOM TO GROW, 52  
UNIX SYSTEM CONSOLIDATION  
IN WORKS, 56

# Workgroup Computing

LANs • Servers • Software for Groups

## New bugs crawl out of the woodwork

By Laura D'Ino

Ever since Robert Morris Jr. launched the now infamous Internet "worm" in November 1988, computer viruses have become a commonplace, unpleasant and sometimes costly fact of life for users.

Nearly every business has been bitten by some type of viral bug at least once. In fact, a recent survey of about 500 information systems and security professionals by the Computer Security bulletin board service (ComSec BBS) in San Francisco found that 64% of the businesses had experienced at least one computer virus in a 12-month period.

However, a new crop of platform-specific viruses designed to invade particular operating systems and network operating systems has begun making the rounds during the past several months, according to virus experts.

There are specific viruses for Microsoft Corp.'s Word for Windows and Windows 95, another bug for Web servers and at least two viruses devoted to OS/2, said David Staag, chief technology officer at Norman Data Defense Systems, Inc., a manufacturer of antiviral software in Fairfax, Va.

These latest bugs are particularly pesky for users because they are among the first to infect text files, said Hans von

Bugs, page 56

## LEAST WANTED

The world's worst viruses

### IRISALISM

An older virus (circa 1987) with lots of sleeping points. More than 250 strains exist.

### SATAN Bug

A polymorphic bug that prevents login and access to the file server.

### GREEN CATERPILLAR

This bug infects a directory upon viewing or when a file is copied. It also can infect files on servers.

### MORSEY

A stealth boot virus that encrypts the master boot sector codes so the hard disk is unrecognizable when a user boots up from a floppy disk.

### NATIG

Another polymorphic virus - NATIG is SATAN spelled backward - that infects the boot area of the disk and is difficult to detect.

### JINNA

Just now starting to make the rounds, it infects the boot sector and files. Many users find it takes them dozens of attempts to remove it.

### GOOD TIMES

This virus isn't real. Nonetheless, it resulted in lots of lost productivity when users thought it was heading for their computers.

### WORM FOR WINDOWS MACRO

New strains of this virus, which attacks operating systems and network operating systems, are starting to make the rounds. This one executes in text files and can wipe out an entire directory.

### MICHAELSHIELD

Designed to infect computers in mid-March to commemorate Michelangelo's birthday, it caused near hysteria and received a lot of press four years ago. It never materialized the hype, but the virus is still fairly common today.

Source: David J. Staag, Norman Data Defense Systems, Inc., Fairfax, Va.

## Faster workstations go head-to-head

### Sun launches low-cost Ultra Unix line

By Jean S. Bozman

Sun Microsystems, Inc. surprised industry analysts and users with lower-than-expected prices when it launched its Ultra line of 64-bit Unix workstations this month. The workstations have two to four times the performance of the Sun SPARCstation 20 models they will eventually replace, beta testers said.

The pricing move was designed to encourage longtime users to purchase Sun machines again, as chips in new Sun workstations have lagged rival RISC chips for the past

three years, analysts said. Sun reassured its price/performance lead, and its machines are second only to Digital Equipment Corp.'s Alpha machines in absolute speed, analysts said.

The combination of speed and price is attractive. Sun users said last week. "It puts Sun in a whole different light, and it makes them a vital entity," said Larry Stair, manager of engineering systems at Harley-Davidson, Inc., the motorcycle manufacturer in Milwaukee. He said the 64-bit workstations will fit

Sun, page 56

### Sun surprise

Sun announced lower-than-expected prices for its Ultra line of 64-bit Unix workstations

Model	CPU	Memory	Hard disk	Price
Ultra 1 Model 140	143 MHz	32M bytes	1G byte	\$16,495
Ultra 1 Model 170	167 MHz	64M bytes	2G bytes	\$22,995
Ultra 1 Creator Creator 3D Model 170E	167 MHz	64M bytes	2G bytes	\$25,995 to \$27,995
Ultra 1 Creator Creator 3D Model 2300	Two 200 MHz	256M bytes	4G bytes	\$57,995 to \$59,995

### HP revamps midrange technical units

By Jean S. Bozman

Hewlett-Packard Co. this week announced it is revamping its midrange technical workstations with uniprocessor versions of the desk-side J models announced in June.

The new C-class units will replace the HP 9000 Model 725—which often doubles as a technical server at user sites—with a design that can be upgraded with 64-bit chips next year.

Those chips will come none too soon for HP. With these models, the Palo Alto, Calif., firm is trying to compete with new 64-bit workstations from Sun Microsystems, Inc. (see story at left).

In the meantime, price cuts of 20% for larger desk-side J models are also part of the deal. That will result in immediate savings of \$3,000 to \$7,000 for J200 and J210 models. At the same time, HP is announcing a technical server, the Enterprise Parallel Server 20, that combines up to eight K-series servers in a single high-end technical cluster.

Users had expected the desktops, and some said they thought HP's move came a little late, considering the larger-Js have been shipping for five months. But they also welcomed the lower cost of the C-class.

At Los Alamos National Laborato-

ry in New Mexico, researchers have been looking forward to desktop units that can be upgraded to 64-bit chips. The site already has several J machines. "It's not an answer to a prayer, but it is a steppingstone to another architecture," said Ron Nelson, a computing team leader in the laboratory's Neutron Science Center.

The University of Iowa's College of Engineering plans to use the C-class models as personal workstations rather than shared servers for researchers. The site recently installed a J210 server for scientific computations, said Doug Elliot, director of network operations at the engineering college, which has more than 200 HP Unix workstations.

Analysis said Sun's new Ultra series of 64-bit workstations outpaces the C- and J-class workstations—for now. Sun's Ultra series has better price/performance, and SPECmarks show that Sun's UltraSPARC chips edge out the PA-RISC 7200 chip, analysts said. But HP said its PA-8000 64-bit chip for next year will be 70% faster than Sun's 64-bit chip.

Even so, HP users will get value for their C-class purchases, said Andrew Pitt, a workstation analyst at Dataquest, Inc. in San Jose, Calif.



# hard

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you'll be as sorry  
as me.

See, I had a chance like that once, long before there were any computers, and big Fortune 500 companies were even usin' processors like that quick little MIPS RISC thing.

It was the summer of 1908. The hot one. I was enjoyin' the breeze from the sun porch, when I saw a young man lookin' right through the screen. Scared me near to death.

'Howdy miss,' he said, 'I'm sure you're aware of this new refreshment that's sweepin' the south.'

Then he held up that bottle.

'Well,' he went on, 'we're lookin' for investors, 'cause we want to expand.'

Then I said, 'Mister, I sure do like your drink, but tryin' new things like that really isn't in my nature.'

'Suit yourself,' he says, tips his hat, and walks away.

Now, I don't have to tell you what soda pop that young fella was talkin' about, do I?

So when I heard NEC's 250 MHz V<sub>R</sub>4400<sup>®</sup> runs Windows NT up to three times faster than that 100 MHz Pentium processor, I wanted to hear more.

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## Workgroup Computing

# Vines users get room to grow

Get access from any Windows-based PC

By Laura Dadio

Banyan Systems, Inc. and Attachmate Corp. recently inked a deal that will let Vines users access mainframes, minicomputers, and the Internet from any Windows desktop.

The pact calls for Attachmate, in Bellevue, Wash., to enhance its Extra universal information access client software to support StreetTalk and Vines IP from Banyan in Westboro, Mass.

## 1 million strong

Attachmate's Extra for Windows client access software has an installed base of more than a million users, and more than 500,000 Vines users have Windows desktop clients, said Banyan product manager Elaine Haney.

The enhanced Extra products will enable Microsoft Corp. Windows, Windows NT Workstation and Windows 95 desktop users to transparently access data and services from mainframes and minicomputers. Supported hosts include IBM's AS/400, Digital Equipment Corp.'s Alpha and VAX systems and Hewlett-Packard Co.'s Unix hosts. Internet access will also be supported.

Attachmate's Extra Personal Client

and Zip SNA gateway are already shipping. Zip Console is due by year's end, said Mark Leff, Attachmate's strategic relations manager.

The Extra Personal Client lets users integrate data from mainframes and minicomputers directly into Windows applications. The Extra client software also includes a built-in remote access facility so remote or mobile users can access all host services and databases as if they were attached locally.

The Zip SNA gateway gives users managed LAN-to-mainframe access. The Zip Console is a remote graphical tool that lets network administrators manage network resources and monitor network events; it is slated to ship by the end of the

year, Leff said.

While new installations of legacy host networks are declining, users' need to access these networks from client/server environments is increasing by about 15% to 20% each year, said Bob Sakakura, an analyst at Aberdeen Group, Inc., a consultancy in Boston.

That was the experience of Mark Comer, a senior systems engineer at Sprint Corp. in Atlanta and a longtime Attachmate user.

The packages "will help us further solidify our internal network infrastructure, which includes over 3,000 remote users, by letting them seamlessly access hosts—local and remote—from their desktops," Comer said.

## Reaching out

Banyan Vines users will be able to access a variety of mainframes, minicomputers and the Internet from their Windows desktops, using new connectivity software from Attachmate. The software includes the following:

- Extra Personal Client, which allows PCs to access legacy mainframes, lists for \$425 per seat.
- Zip SNA gateway for LAN-to-mainframe access costs \$995.
- Zip Console, a graphical administrative tool, retails for \$1,995.

# 3Com unveils low-cost switch

By Bob Wallace

3Com Corp. recently dove deeper into the nascent Token Ring switching market with the announcement of an inexpensive, flexible, stackable Token Ring switch and a raft of Token Ring products for remote offices.

Designed for a data center or workgroup, the LinkSwitch 2000 TR will ship next spring, followed by a separate system for the desktop, the LinkSwitch 100 TR, late next year.

The LinkSwitch 2000 TR has 12 ports and was designed to help users provide dedicated bandwidth in segmented Token

Ring LANs and/or individual users in workgroup or data center environments. It will cost less than \$700 per port.

## Positive response

Analysts hailed the introduction of the stackable switch for its low price and rich set of features.

"Stimulatingly, this is very important [to 3Com] because to be an enterprise networking provider, Token Ring support is critical," said Tom Bain, a research analyst at Meta Group, Inc. in Boston, Va.

At least one longtime 3Com user agreed but said he would like to see the price per port

## LinkSwitch 2000 TR

Description: A 12-port, stackable Token Ring switch

Bandwidth: Dedicated 4M b/sec, or 16M b/sec, per port

Throughput rate: 400,000 packets/sec.

Key features: Source Route bridging, transparent bridging, Source Route Transparent, High Speed Cascade Interface, 802.3D and IBM Spanning Tree

Switching scheme: Adaptive Cut-Through; can use store-and-forward or cut-through on a per port basis

Other: SNMP-manageable; can support virtual LANs

drop substantially.

"Token Ring switching is needed because it's a means to provide end users dedicated bandwidth to servers," said Mohammed Patni, a network manager at North Carolina State University at Raleigh. "I'd like to see the price per port drop to the \$200-to-\$300 level you see with Ethernet switching. In the meantime, we're also looking at ATM."

Although LinkSwitch isn't 3Com's first Token Ring switching product—Token Ring switching modules for the company's LANplex 8000 data center chassis hub recently began shipping—analysts said it is the most important.

"They're definitely weak in that area," said Tom Dell'Oro, president of the Dell'Oro Group, a consulting and research firm in Menlo Park, Calif. "But the LinkSwitch 2000 will definitely help them go up against SMC, 3Com, Lannet and Xylan."

## Ship dates

Further, IBM will begin shipping its stand-alone Token Ring switch early next year.

3Com said it will ship Fiber Distributed Data Interface and Asynchronous Transfer Mode (ATM) downlink modules in May and the third quarter of next year, respectively.

It wouldn't give prices for these products or the LinkSwitch 100 TR, a stackable 24-port desktop Token Ring switch due in the fourth quarter of 1996.

## Supporting products on the way

In addition to its Token Ring switch, 3Com launched a product blitzkrieg of routers and hubs that work with the new switch.

They include four NET-BUILDER Remote Office routers. The 327 and 327T handle routing for IBM SNA internetworks. The 328 can be upgraded to a multiprotocol router. The 327 supports IP, Novell, Inc.'s IPX, Apple Computer, Inc.'s AppleTalk and Digital Equipment Corp.'s DECnet as well as Data Link Switching

and transmission of SNA data over frame-relay networks.

Looking to cash in on widening deployment of Integrated Services Digital Network (ISDN), 3Com announced two Token Ring routers—the 328 and 327. They link Token Ring LANs to corporate networks using ISDN Basic Rate Interface (BRI) lines.

ISDN BRI lines provide two 64K b/sec channels and are fairly inexpensive. In comparison, routers that use asynchronous dial-up links get

less bandwidth (28.8K b/sec.) and typically cost more.

3Com also extended its LinkBuilder stackable hub line with the FMS TR 12 and FMS TR 24, which have 12 and 24 ports, respectively.

Analysts said the products will eventually help 3Com expand its business among large corporations.

"By addressing the needs of the enterprise with this strong breadth of products, 3Com is after the pot of gold, which is the Fortune 1,000," said Lynn Nye, president of NetResults, located in Portland, Ore.

—Bob Wallace

## 3Com's Token Ring product blitz

NetBuilder	Stackable	\$2,995	Now
Remote Office 323	routers		
327		\$3,995	Now
NetBuilder	Multiprotocol	\$3,495	March
Remote Office 323	routers		
327		\$4,495	March
LinkBuilder	Stackable	\$1,695	Now
FMS TR 12	hubs		
24		\$2,495	Now
TokenLink II	ISA adapter	\$275	Next month
TokenLink Velocity	PCI adapter	\$425	Next month
LinkConverter II	Legacy traffic converter	\$3,895 to \$5,095	Now



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## Workgroup Computing

# Unix consolidation plan to be detailed in December

by Jean S. Bozman

Vendors are still charting the consolidation of Hewlett-Packard Co.'s Unix with Unix systems from Novell, Inc. and SCO, Inc., but SCO executives last week said they will announce a detailed migration plan by December.

The merger of the operating systems results from Novell's sale of its Unix business to SCO, effective Dec. 1. The merger makes the

**Unix merger** Intel variants—HP's HP-UX, Novell's UnixWare 2.0, and SCO's Open Server 5—just in time for Intel to ship 64-bit chips in 1997 [CW, Sept. 23].

The vendors announced at Unix Expo '96 in September that they would merge the three operating systems, and the companies are trying to make good on that promise.

"It's about two weeks too early to be read definitive with everything," said Grover Riggler, vice president of strategic technology at SCO. "We're trying to build a plan that goes through the 30 time frame, the merged product time frame and 64-bit time frame."

## Step one

The first move—combining the SCO and Novell Unix systems—seems like it will be straightforward, analysts said. Novell's UnixWare 2.0 already has limited compatibility with SCO applications. This merger is expected to be completed in 1997. The second step, the move to 64-bit code on Intel in 1999, began with separate HP and SCO efforts.

Analysts warned that users will hit some bumps along the way. "It's going to be a double transition," said Scott Winkler, a vice president at Gartner Group, Inc. in Stamford, Conn. "It's up to HP and SCO to do a good job. But we think it's going to be reasonably hard [on users] under most circumstances." That is because users will likely have to change all their old applications to work with the revamped operating system's features.

Some users have put their SCO Unix and UnixWare plans on hold until details of the merger are ironed out. Mike Shelton, manager of information technology research and planning at agricultural giant Cargill, Inc. in Minneapolis, said a project to install Novell's UnixWare nt 100 of 1,000 branch offices may be put off for three to six months.

"We don't know what that migration issue will look like once 1997," Shelton said. If UnixWare is installed now, the migration to the new merged version "may be more than we want to undertake," he said. "We need to get together with SCO and pin them down on their precise plans, what the deliverables are going to look like."

Shelton said users will eventually reap benefits from the 64-bit Unix-on-Intel architecture, including greater scalability and a bumper crop of applications and large databases.

But some users are also wondering about migration steps that will be difficult and time consuming. Cliff Triplett, director of information systems at Alliedsignal, Inc.'s engines business unit in Phoenix, said many

## Migration pattern

The migration strategies for merging Unix systems from SCO, Novell and Hewlett-Packard

HP will start migrating its 32-bit HP-UX Unix to 64-bit code, using its first with HP's 64-bit RISC chips.

SCO's Open Server 5 Unix operating system will merge with Novell's UnixWare 2.0. The 32-bit system will run on Intel.

HP-UX will run on the merged HP-UX (P) chip.

64-bit HP-UX will merge with the combined SCO-UnixWare operating system. SCO will deliver a 64-bit shrink wrapped version for Intel.

Source: Analysts and industry sources

HP users are still handling this year's switch from HP-UX to x to 10.x.

But when the merger is done, users will have fewer flavors of Unix to administer, said Bob Goodman, vice president of MIS at Pop Boys, an autoparts chain based in Philadelphia. The firm has two SCO Unix-on-Intel servers in 400-plus stores and HP Unix servers at headquarters.

"I only know that it's happening and that it's positive," Goodman said. "I just want to see all the Unix groups come together. They've been promising that for years, and thanks to [competition from Microsoft Corp.], Bill Gates, they're going to do it."

that the changes inside the server operating system will have little impact on day-to-day use. Some said the big "bump" will come when HP-UX for Intel is merged with the SCO/UnixWare system. And others aren't ready to think about it—yet.

Bob Washa, an IT manager at Chevron Corp. in San Ramon, Calif., said his first concern is upgrading HP-UX to a sometime next year.

"Right now, our plans only go out 18 months," he said.

—Jean S. Bozman

## Sun

CONTINUED FROM PAGE 49

into the mix of Sun and Silicon Graphics, Inc. boxes the company uses for computer-aided design. "It looks like it'll improve network speed and some graphic capabilities," he said.

The key to the Mountain View, Calif., company's pricing strategy is high integration inside the workstation, analysts said. A high-speed crossover switch connects memory, the 64-bit processor and the 24-bit color Creator graphics subsystem. A new Visual Instruction Set built into the processor handles high-speed displays, which are usually handled on a separate chip. Sun supports 100M bit/sec. Fast

Ethernet on the motherboard—10 times faster than before.

The Ultra must use Solaris 2.5, a new operating system release that supports the UltraSPARC chips. "I think it's just a drop-in," said a user at a large West Coast information service who asked not to be named. "We can load the operating system over the network, so we won't have to use a CD-ROM to boot each new machine."

Sun has used pricing to retain its 37% worldwide market share. "People have written off Sun several times in the past couple of years," said Tom Copeland, an analyst at International Data Corp. in Framingham, Mass. "Yet...they do have loyal users and people who find it very hard to switch off their platforms."

## Bugs

CONTINUED FROM PAGE 49

Brown, who runs the ComSec R&D and is director of computer security at Creative Strategies, Inc., a San Francisco-based consulting firm.

Viruses typically infect a directory or the boot sector of a computer's hard drive.

"The industry is abuzz right now about the first Word for Windows macro virus and other platform-specific viruses," von Braun said. "The Word for Windows macro is getting a lot of notoriety now because it does damage text files, and most virus scanners or antivirus software packages don't currently scan for viruses in text files. So the industry has been caught unaware."

That was the experience of one user at an East Coast financial institution that caught the Word for Windows bug.

"We had no idea we even had the Word for Windows virus or where it came from," said the network administrator, who requested anonymity. "Our first clue that something was seriously wrong came when we realized it had wiped out the directory."

Stang and von Braun agreed that the reason viruses haven't been more of a scourge on networks is that many of the virus authors "are young and generally not network savvy." Stang said. But even that once hard-and-fast rule is changing. "There's always a hacker who's a step ahead," Stang said.

One example of that is the "Good Times" virus, which doesn't exist. Someone sent a

warning message purportedly from the Federal Communications Commission to about 100 businesses last year, warning them of the bug.

"Anyone with any intelligence should have paid no attention to the warning because the FCC doesn't issue virus warnings," von Braun said. "But a lot of people didn't catch on."

## Bug repellent

To defend against operating system and network operating system viruses, experts recommend that businesses install antivirus software on all Novell, Inc. NetWare and Microsoft Windows NT file servers.

They said it is crucial for the virus-checking software to perform real-time server scans.

"Otherwise, chances are very good that you'll miss an infection, especially if you have a busy network," said David Stang, chief technology officer at Norman Data Defense Systems.

If you don't have a software package that performs real-time server scans, make sure you install antivirus detection software that provides automatic alerts and warnings if the system is infected.

Also, ensure that individual users' PCs are virus-free before the users log in. —Laura Dadio

## Hurdles to overcome

Technical challenges in the merger of three Unix operating systems are bound to crop up, users and analysts said.

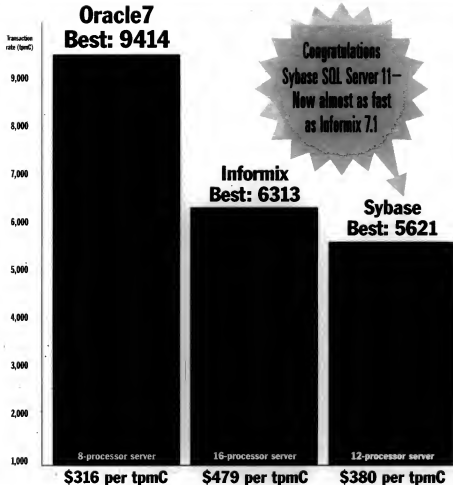
Different underlying file structures, user interfaces and the like will mean users will have to adjust to the merged system. But new Unix standards for applications programming interfaces (API)—the SPEC 1170 APIs—and the Common Desktop Environ-

ment graphical user interface will go a long way toward hiding the changes from users, analysts said.

Key issues to watch during the transition include whether vendors provide familiar system administration tools and work on making the differences between the SCO and UnixWare file systems, said Scott Winkler, an analyst at Gartner Group.

Some users are confident

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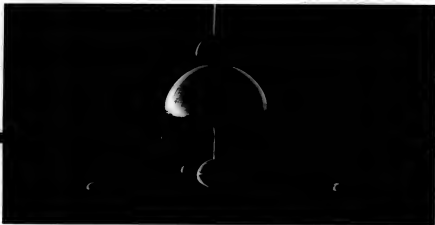


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# Enterprise Networking

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Gen. Norman H. Schwarzkopf (left) and Steven Spielberg are spearheading StarBright World, a network for hospitalized children

## StarBright net gives sick kids on-line relief

By Tim Ouellette  
NEW YORK

Computer technology may give pediatric hospitals better bedside manners.

The StarBright World computer network aims to give sick children a way to play games and communicate from their hospital beds. Studies have shown that some children need less medicine and recover more quickly when they have access to other kids on-line.

StarBright World combines videoconferencing and an interactive, three-dimensional, animated environment. The network was unveiled recently at Mount Sinai Medical Center in New York.

### Pilot project

"This is an opportunity for children to escape the prison of their illness," said Gen. Norman H. Schwarzkopf. He and entertainment mogul Steven Spielberg are spearheading an effort by the Los Angeles-based StarBright Foundation to raise \$50 million to build and improve the network.

Four hospitals, one in Boston, New York, Pittsburgh and Palo Alto, Calif., make up the pilot project. Similar programs will be set up next in hospitals in Dallas, Washington and Los Angeles.

In StarBright World, children pick an animated figure, or avatar, to represent them. They can build things, explore and play with other avatars in several

worlds with different themes. The children can also see the other avatars and speak with one another on the telephone or face-to-face via videoconferencing.

The children gain communication with the outside world, but they also push the edge of current computer networks by using real-time, interactive, 3-D video and audio.

"These kids are the first advance in a technology transformation that will make the telephone look like two tin cans connected with a string," said Robba Benjamin, president of multimedia and strategic services at Sprint Corp., one of the network's sponsors.

Sprint provided StarBright World's fiber-optic, T3 digital transmission network. Intel Corp. provided multimedia PCs, dubbed StarBrights, and videoconferencing software. UB Networks, Inc. installed LAN equipment and network servers at the hospitals, and Worlds, Inc. developed the multimedia play spaces and avatars.

The StarBrights will be both mobile and stationary units, said Marc Milstein, vice president of information services at Children's Medical Center of Dallas.

He said how marrow transplant patients at the Dallas hospital will be the first to use StarBright World. These patients must be isolated for long periods to prevent infection.

## Network decks desktop video

By Tim Ouellette

Desktop videoconferencing has been heralded as an application for tomorrow, but it still faces obstacles that make its future fuzzy with business users.

Users of room-type group conferencing systems say they don't get the same usefulness from desktop videoconferencing systems.

Rosemount, Inc. in Minneapolis uses a group system from PictureTel Corp. to communicate with its new Singapore plant, said operations manager Scott Olson.

"We tried a couple of smaller desktop units, but they don't get as much use," Olson said. "We usually end up needing more people than you can put around a desktop system."

Olson said he uses desktop videoconferencing to meet each week with project managers. He said he is happy with its performance, but getting Integrated Services Digital Network (ISDN) access was a challenge.

Limited access to ISDN, whose higher throughput is considered a must for desktop videoconferencing, is one problem facing the technology. Others include higher systems costs per user than the costs of group systems and PCs that don't have enough power to handle video (see chart).

Even when everything seems to fall into place for desktop videoconferencing, problems can arise. It took Rosemount's carrier weeks to run the special ISDN lines into the company and weeks more before they worked, Olson said. ISDN costs increased the price substantially, he said.

"The price of the desktop system isn't as bad as the line charges and the cost of running the line in," he said. He estimated it cost the company \$500 to \$800 per line. And when ISDN lines are run into a specific office, users can't easily move to another office unless they want to incur more installation and wire costs, Olson added.

Users also face the dilemma of trying to determine, "What is this going to be used for? [and] 'What is the business case?'" said Elliot Zeltzer, manager of

### How low can you go?

The price of videoconferencing per desktop is expected to drop due to native signal processing features in PCs and the development of gateways that link LANs to ISDN-based WANs.



Source: Personal Technology Research, Inc., Wellesley, Mass.

corporate telecommunication services at D'Arcy Mashek Benton & Bowles Advertising, Inc. in Detroit.

Users and analysts said another major piece of desktop videoconferencing that is missing is a gateway off the LAN. The gateways, which promise to let users dial out globally from their PCs on LANs to an ISDN wide-area network, aren't in place yet, said Sarah Dickinson, an analyst at Personal Technology Research, Inc. in Waltham, Mass. They will appear in the next two years, she said, and should remove the ISDN connection problems.

## ATM needs time, supporters say

By Neal Weisberg  
BARRINGTON

Even the most ardent proponents of Asynchronous Transfer Mode (ATM) are conceding that the technology won't begin to reach enterprise-wide, commercial deployment until 1997 or 1998.

The vendors and visionaries attending the recent Next Generation Networks conference here weren't backing off an inch from their view that ATM will one day be a ubiquitous, enabling technology that moves voice, data and video in a single pipe from desktop to desktop across wide-area networks.

But a variety of obstacles, from high costs to incomplete

### ATM: Beyond the hype

<b>Who's really using it:</b> Government Universities Hospitals Finance
<b>What they use it for:</b> Primarily data
<b>Where it's being used:</b> Mostly in small workgroups or as a LAN backbone
<b>When it is being implemented:</b> EARLY ADOPTERS: Today MAJORITY: 1997-1998
<b>Why use it?</b> Because it offers high bandwidth end to end for voice, data and video

standards to the lack of application and management tools, have limited the spread of the technology to small commercial test sites, universities and government agencies.

### Time line

"We as an industry group were unrealistic about how quickly this could be here," said John Chambers, president and chief executive officer of Cisco Systems, Inc. in San Jose, Calif. Chambers said that although ATM standards and ideas were first discussed in 1987, and the first products debuted in 1991 and 1992, the technology won't gain widespread acceptance until the 1996-2000 time frame.

ATM, page 68

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# Web becomes home of straw vote

N.H. daily newspaper brings candidates, voters together for pre-primary, on-line forums, polling

By Michael Goldberg

**A** Foster's Daily Democrat, a newspaper in southern New Hampshire, editors are bragging the feistiness of the presidential primary season to the World Wide Web.

The daily newspaper in Dover, N.H., is using Workgroup Web Forum, Internet server software from Digital Equipment Corp., to organize interactive forums for candidates, citizens and schoolchildren.

Before the primary in February, Foster's expects to moderate on-line candidate forums, monitor the party races with a panel of observers and conduct polls about questions posted by the newspaper's editors and other users.

"Increasingly, campaigns are becoming very shallow as we get more sound bites than we ever got before," said Phil Kincaid, assistant managing editor at the newspaper, which is owned by The George J. Foster Co.

"Here's an opportunity to delve into issues and maybe have a bit more thoughtful and meaningful discussions," Kincaid explained.

Workgroup Web Forum and its LAN-based cousin, Workgroup Web, are part of a line of Internet products Digital is aiming at large and medium-size businesses. The software gives Digital a modest boost in its attempt to become a player in Internet commerce, observers said.

Workgroup Web Forum is an Internet application that sits on top of Web servers such as those

from Netscape Communications Corp. and Process Software, Inc.

The product costs \$1,995 and was designed to let PC users with standard Web browsers participate in forums, start new discussion threads, post replies or answer surveys. Workgroup Web Forum runs on Microsoft Corp.'s Windows NT or Digital Unix.

## Inter-office use

While Foster's is bringing conferencing technology to a public arena, Workgroup Web Forum's many-to-many communications capability should be attractive to businesses that are looking



Foster's Daily Democrat newspaper has brought computer conferencing to the public arena

to collaborate inside their own firewalls, said Michael Gould, an analyst at Patricia Seybold Group in Boston.

"Companies, for the past two years, have been finding tremendous opportunities for us-

like Web pages.

They can access messages and files by pointing and clicking. Workgroup Web costs \$89 per user. It was designed for project teams of three to 25 within a company.

ing World Wide Web technologies, for broadcasting information within their organization, but it's very unidirectional," Gould said. Workgroup Web Forum, however, would enable two-way communication between workers.

For example, web Workgroup Web, PC users who are connected by a LAN can create their own shared file sites that look

## Briefs

### Clinton urges privacy restraints

The Clinton administration recently said the nation's telecommunications and Internet service providers should disclose their privacy policies so consumers know how their personal information will be handled. The administration urged network vendors, on a voluntary, self-regulated basis, to notify consumers and obtain consent before exploiting personal data.

### AOL meets the Web

America Online, Inc., in Virginia, Va., unveiled its long-awaited Internet access products. The on-line service acquired Internet software maker Global Network Navigator (GNN) in Berkeley, Calif., early this year and for several months has been testing a new version of the GNN service that is integrated with America Online. Meanwhile, as recently as last month, glitches with AOL resulted in lost electronic mail for test users, ac-

cording to a memo issued to those testers by the GNN group within America Online. America Online said an August launch was canceled to do more testing and avoid getting buried in the hype surrounding Microsoft Corp.'s Windows 95 release.

### Health privacy bill debuts

A bipartisan group of U.S. legislators, led by Sen. Robert F. Bennett (R-Utah), has introduced a comprehensive bill to protect the privacy of electronic medical records. The bill, which won't be voted on until next year, was endorsed by the American Health Information Management Association and the Center for Democracy and Technology.

### UUNet allies with Premios

Premios Corp., in Concord, Calif., and UUNet Technologies, Inc., have formed an alliance to provide secure electronic data interchange traffic over the Internet.

# Microsoft to ship 'net tool kits

By Stuart J. Johnston

In a move to bridge its cybergap, Microsoft Corp. announced it will ship next month beta versions of two Windows NT-based Internet tool kits.

The on-line Internet Software Developers Kit (ISDK) was designed for users who want to build World Wide Web sites. The Internet Business Development Kit is aimed at NT resellers.

Several NT resellers praised the tools. Walter Taubert, president of Corporate Computer Inc. in Seattle, an NT reseller and custom developer, said the tools are very easy to use. Both kits will include a beta version of Microsoft's Internet server for NT, code-named "Gibraltar," beta code for the company's "Blackbird" development tools, and the beta version of Microsoft's Internet Explorer Version 2.0.

## A dent in the market

Blackbird was designed for writing content for The Microsoft Network. It will be modified to support the Internet. A commercial version of Blackbird will be available in the first quarter of next year, said Doug Heinrich, director of developer relations at Microsoft.

The Internet SDK will include other developer-oriented items, including code libraries with support for GLE controls, Heinrich said.

The Internet Business Development Kit will omit the extra development tools. It will instead a copy of Microsoft's Word Internet Assistant, which gives Word Hypertext Markup Language support.

NT is expected to make inroads into the Web server market dominated by Unix, said Bill Kar-

## What's in Microsoft's Internet tool kits?

### Internet SDK

- GLE support, OLE custom controls and code libraries

### Business Development Kit

- Word Internet Assistant adds HTML support to Microsoft Word
- Reviewers, guides, demos and presentations

### TOOLS BOTH KITS SHARE


- Gibraltar server, Blackbird publishing tools and Internet Explorer 2.0

ow, a senior software analyst at Workgroup Strategies Services, Inc., a market researcher in Portsmouth, N.H. He said another benefit of deploying Web servers on NT will be that most users already will be familiar with Windows.

"You've got a [standard] interface that everyone is familiar with," Kaem said. "It's not like Unix, where you have a slightly different version you've got to learn every time."

The beta version of the Internet SDK will be available next month for downloading on-line from Microsoft's file transfer protocol site. It is free and will be included in the Microsoft Developer Network CD-ROM in the first quarter of next year.

The beta version of the Internet Business Development Kit will be available on CD-ROM next month. It will be free to Solution Providers, which are Microsoft's NT resellers. Others will be able to get the kit for a nominal fee, Heinrich said.



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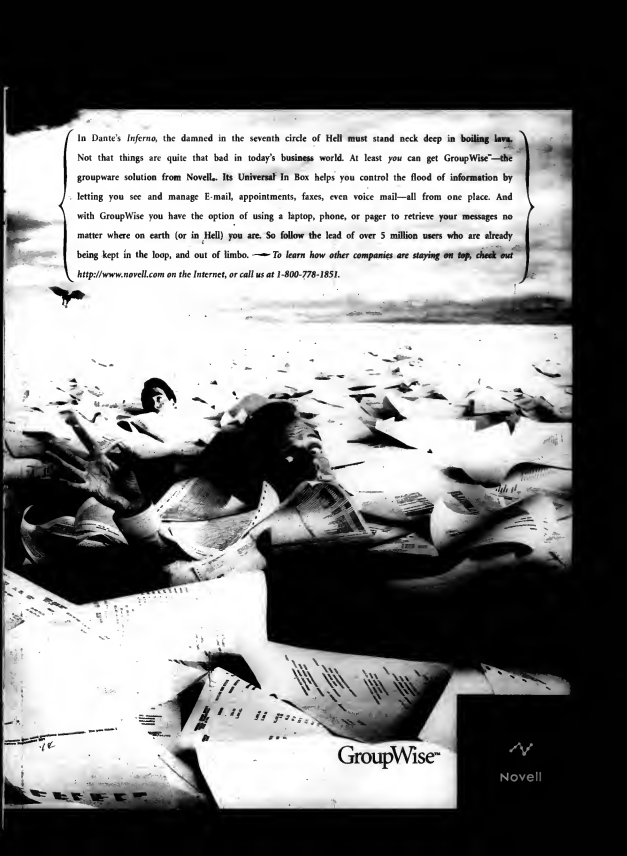
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# Private affairs

Two sides consider government's role in use, enforcement of encryption keys

By Gary H. Antkes

U.S. export laws.

It boils down to whom you fear more: drug dealers, pedophiles and terrorists or the U.S. government.

Stewart A. Baker, former general counsel to the National Security Agency, says it is clearly the criminals who should be feared most, especially as they turn to technology such as cryptography to protect themselves against wiretaps.

Baker, who is now at Steptoe and Johnson, a law firm in Washington, supports government initiatives that would make encryption keys available to law enforcement for court-supervised wiretaps.

But Philip Zimmermann worries that the government would abuse the ability to do "point-and-click wiretapping." The Boulder, Colo., programmer developed Pretty Good Privacy (PGP) software, which, despite its quaint name, uses industrial-strength encryption to ensure the confidentiality of electronic mail.

Zimmermann made PGP available free on the Internet, but that landed him in hot water when overseas users downloaded it. He is under criminal investigation for allegedly violating

Baker and Zimmermann recently squared off at the Cato Institute in Washington to debate the pros and cons of PGP. What follows are excerpts from that debate:



**"We need cryptography to give us back some of the privacy we've lost because of the Information Age."**

— Philip Zimmermann

Zimmermann: "I don't want to see our children grow up in a society optimized for surveillance. Even a good government gradually can be tempted to go bad by incrementally easier abuses of power."

The only solution is cryptography. We need cryptography to give us back some of the privacy we've lost because of the Information Age.

It is possible for the first time, with modern cryptographic algorithms, to put information beyond the collective reach of society. That must be a scary thing to the government."

Baker: "I am struck by the extraordinary costs that are paid for this abstract notion that we should make it less easy for the government some day to fulfill its E-mail and will find it encrypted and unsearchable."

Unreadable encryption [such as PGP] is going to cause pain for a lot of people. For example, there will be parents who will come home and find their child missing. They will try to read his E-mail and will find it encrypted and unsearchable."

There will be companies where fraud will be committed by employees who will use unreadable encryption. And we will see the most abhorrent parts of society band together and get the full benefit of the networked global infrastructure to coordinate actions in an utterly secure fashion."

Baker: (Asked about past government abuses of surveillance.) "The things [former FBI Director J. Edgar] Hoover and



**"I've been struck by the extent to which the rules are observed, not the extent to which they have been violated."**

— Stewart A. Baker

[former President Richard] Nixon on did were illegal then and illegal now. But I've been on the inside of things. I've been struck by the extent to which the rules are observed, not the extent to which they have been violated."

Zimmermann: (Asked about the "illegal export" of PGP.) "PGP is used in countries with very bad governments, such as Burma, Honduras, Guatemala and Tibet. The resistance movement in Burma is being trained in PGP on portable computers in jungle camps. Before PGP was introduced, captured documents would lead directly to the arrest and execution of entire families."

## Conditions may render decryption policy D.O.A.

By Gary H. Antkes

Second thoughts have struck those users and vendors who cheered the White House's pronouncement in August that it would permit the export of encryption products significantly stronger than those allowed in the past.

They say the government plan is dead on arrival. At issue is the Clinton administration's continued insistence that if strong encryption is exported, it must have a feature that would let the government decrypt messages in court-approved wiretaps. Users would have to "cave" their encryption keys with agents certified by the government.

The draft policy says the government will allow the export of products that use 64-bit encryption keys. The 64-bit keys would

make coded messages 16 million times harder to break than those messages that use 40-bit keys. A French student shook up the world of electronic commerce in August when he cracked the 40-bit encryption scheme used in the export version of Netscape Communications Corp.'s Navigator browser for the Internet [CW, Aug. 21].

### False promises

Software vendors, who would like to have just one version of a product for sale here and abroad, accused the Clinton administration of strong-arming them into moving to key-escrow encryption in all their encryption products.

"In the name of 'national security,' it appears that the administration really is attempting to satisfy domestic law-enforcement concerns —

## Pretty gutsy

**C**all him gutsy. Call him daring. Call him what you want, but when you call Philip Zimmermann, make sure you use his Pretty Good Privacy (PGP) software.

One would think Zimmermann wouldn't push his luck, already he is under criminal investigation for allegedly allowing his PGP electronic-mail encryption software to be exported via the Internet. But he recently posted a beta version of PGP for the Macintosh on an Internet server at MIT. An updated version and one for Microsoft Corp.'s Windows 95 will be on-line by the end of the month, Zimmermann said. All the versions are free.

PGP software uses speech compression and cryptography to turn a notebook computer into a secure telephone.

"My hope is that [PGP] will become a standard, the way POP has," Zimmermann said. "If they outlaw it after millions of people have it, then millions of people will be criminals."

"I intend to work full time on making more encryption tools available to the general public for free," he said.

PGP is available on the World Wide Web at <http://web.mit.edu/network/pgp/one> and via file transfer protocol from [net-dict.mil.edu](ftp://net-dict.mil.edu) as instructed in the [pgp/one](http://pgp/one) readme.

— Gary H. Antkes

without industry input, public debate or congressional involvement." The Business Software Alliance said in a sternly worded letter to Vice President Al Gore.

But the administration claimed it had responded to concerns raised in two public meetings this fall.

"Based on comments received outside from industry, the [export] criteria have been revised to better reflect commercial interests while balancing the needs of law enforcement and national security," said a statement from the U.S. Department of Commerce.

## ATM

CONTINUED FROM PAGE 58

"ATM is really a work in progress," said Michael Smith, an analyst at Datapoint Information Services Group in Delran, N.J. ATM is mainly used in data-intensive LANs to solve "bandwidth bottlenecks," while its full potential lies in multimedia.

Most users don't need ATM's bandwidth today and won't until new applications come out to justify the expense, he said.

Not that there isn't widespread interest in ATM. ATM is a cell-based switching technology that typically starts at 45M bit/sec, which is significantly more bandwidth than other LAN or WAN transport technologies.

Tom Hug, manager of network management at American Greetings Corp. in Cleveland, said he is sold on ATM but is moving slowly. "There's no

question about it, it's the only thing you can use to standardize at all levels and give the bandwidth you need," Hug said.

Hug plans to implement ATM next year on a small scale to move images across his LAN, which includes 400 Apple Computer, Inc. Power Macintoshes used to design the company's greeting cards. He said he is only excited about ATM's ability to quickly transmit bandwidth-intensive X-ray images. He is looking at a less expensive version of ATM that runs at 25M bit/sec. But he said he is worried he may end up with "the beta version of ATM" if he stays before ATM is broadly deployed.

Senior editor Bob Wallace contributed to this story.

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THE NETWORK IS THE COMPUTER

# Large Systems

HARDWARE • SOFTWARE • CORPORATE STRATEGIES

## Tax collectors going to new-wave system

Advanced software reaps millions

By Mitch Betts

If it's an information systems manager's dream come true, the vendor doesn't get paid until the system is not only working, but also producing more business revenue.

That was the deal made by the California Franchise Tax Board, the state's version of the Internal Revenue Service, for a tax collection system built by

the system's \$5.2 million price tag was recouped.

The state tax board used a new-wave acquisition method, called performance-based or "best value" procurement, in which the agency worked closely with vendors to design the system and new business processes. This was a dramatic change from the usual competitive procurements in which vendors respond to detailed speci-



"Knowing exactly what we'll have to pay for [CA] software during the budgeting cycle makes me look a helluva lot more intelligent to the university's finance people."

M. Lewis Temares

Chief information officer,  
University of Miami, Coral Gables, Fla.

## CA prices change

Mainframe software going up—and down

By Thomas Huffman

Computer Associates International, Inc. has announced mainframe software pricing that will begin next year, and more CA shops will benefit from the discounts than bear the brunt of higher license fees.

CA has dropped the cost of using some of its most popular products—including CA-1, CA-7, CA-11, CA-Scheduler and CA-Library—by 1% to 5%, said Sanjay Kumar, CA's president and chief operating officer.

Meanwhile, CA has imposed 1% to 8% price hikes on some mainframe packages that it claims have become increasingly expensive to support, such as CA-E-Mail and older versions of its CA-IDMS and CA-Datcom database systems. CA wouldn't specify how many products will increase in price, despite repeated requests.

So while users of CA-IDMS 12.0, the latest version of CA's database system, shouldn't see price changes, users of CA-IDMS 10.2 and earlier versions of the software will likely see their bills go up.

"Thrilling-edge customers ask for a lot of support, and it's not economical if you don't charge them for it," said Brandon Masier,

an analyst at Illuminata, Inc., a consultancy in Hollis, N.H. Indeed, Masier and other analysts noted that CA has raised the price of some of its mainframe products just three times in the past eight years. Other mainframe software vendors have regularly shipped 5% annual price increases on their products in the same period.

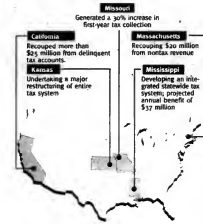
Nevertheless, those words ring hollow for some customers who will pay more for their software next year without seeing any functional enhancements. "CA's pricing strategy has been to encourage large customers of their software to look to alternatives," said Lloyd Durlington, executive vice president of operations at Bank of Montreal in Toronto. The bank is a CA-IDMS shop and doesn't plan to migrate to another vendor's software.

### Integrating Legent

As part of its mainframe software price changes, CA announced it will publish products from Legent Corp. in its price book in the next few weeks. CA recently acquired Legent. Legent customers who had been paying IBM Group 120 pricing for one of their mainframe software will have their prices scaled back by CA to Group 100 levels.

The group-level pricing scheme, which IBM polarized, is based on the size of a customer's computer and the number of CA price changes, page 72

Many state governments are implementing new tax collection systems to reduce the "tax gap"—the difference between what is owed and what is collected.



Source: American Management Systems, Inc., Fairfax, Va.

American Management Systems, Inc. (AMS) in Fairfax, Va.

The annual state procurement has paid off for both sides. The Collection Account Processing System was implemented in 10 months with no up-front costs for California. During the first five months of operation, it helped the state increase collection of delinquent taxes by more than \$25 million—revenue that otherwise might have gone uncollected.

As the newfound tax revenue started pouring in, AMS got its money by taking 75% of the incoming revenue stream until

frictions and the low bidder wins.

"Best value means highest return on investment, as opposed to lowest cost," said Alan Hunter, the tax board's compliance chief in Sacramento. The "best value" approach may cost \$100,000 more than a low-bid procurement, but "it is ridiculous to waste two or three years [writing detailed specifications] to save \$100,000 and miss \$25 million a year in benefits," he explained.

The new procurement method "scares some people because of the degree of subjectiv-

ity in something that has been done by objective scoring [of competitive bids]," said Michele Walsh, an analyst at GE Research, Inc. in Mountain View, Calif. But many states and vendors also have felt "burned" by low-bid procurements in which neither side is happy with the results, she added.

In fact, California's agencies have had a string of bad technology projects in recent years.

The successful tax collection project is a happy exception. "This is the most successful, large-scale system procurement in California in a long time," Walsh observed.

### How it works

Like many other states (see chart), California is revamping its tax collection systems to close a \$2.7 billion "tax gap," which is the difference between

the amount of taxes owed and the amount paid.

How does the system boost revenue? For starters, it handles case management chores that were done on paper. More importantly, the sophisticated software uses data mining and profiling algorithms to identify high-yield cases and decide whether a gentle reminder or tougher collection tactic is

Tax collectors, page 72

## Large Systems

## Vendors find niche in software integration

By Julia King

Slowly but surely, suppliers of integrated enterprise client/server applications are teaming with niche software providers and extending their reach into specific vertical industries.

What this ultimately could mean for users, according to the companies, is faster, cheaper and easier software implementation.

In the past several weeks, enterprise players including SAP AG, Oracle Corp. and PeopleSoft, Inc. have paired with makers of logistics, supply chain and maintenance management software.

The larger vendors will integrate this specialized software into their own multimillion-dollar client/server applications before they are shipped to customers in automotive, pharmaceutical or other industries.

## Plex and minis

On the plus side, such integration could save users millions of dollars in implementation costs — money they generally now pay to outside integrators.

The main drawback is that vendors, not users, choose which software to mix and match.

"I don't think the answer is for the vendors to pick the partners

for users. Users should push to have all the vendors work together," said Paul Margolis, chairman and chief operating officer of Newton, Mass.-based Marcom Corp. and president of Open Applications Group, Inc. (OAG).

OAG is a 9-month-old, 15-vendor consortium that favors specifications for any-to-any package integration.

Vendors would furnish users with multivendor client/server applications that would be integrated out of the box — without the need for additional software interfaces.

This would allow applications to pass data among themselves in a format that still could understand.

OAG in September demonstrated the concept by integrating three different vendors' inventory applications with four other vendors' general ledger applications. Each vendor's software contained an application programming interface written to OAG's message format specification known as the Business Document Exchange (BDE Sept. 25).

But developing widespread vendor support for specifications could take years, so enterprise software companies are cutting integration deals on a vendor-by-vendor basis.

## Quite a pair

Client/server software vendors are pairing with niche software providers to offer scheduling, maintenance, payroll, supply, chain management systems and more.

## Enterprise Client/Server Vendor

SAP AG

Oracle

PeopleSoft

## Paired With

Manufactures Group

Conclium

Project Software &amp; Development

Red Pepper Software

## Niche

Supply chain management technology

Manufacturing execution system software

Maintenance management software

Manufacturing planning and scheduling software

"I don't disagree with plug and play, but the pressure is on for [integration] today," said Robert Shaw, senior vice president of Oracle's worldwide applications and services organization.

To this end, Oracle is marketing this suite of manufacturing applications that are specifically tailored to semiconductor manufacturers.

Besides Oracle's client/server financial software, the suite includes supply chain management technology from Conclium, Inc. in Mountain View, Calif. It also can contain

manufacturing planning and scheduling software from Dulles-based I2 Technologies, Inc., with which Oracle also has a development agreement.

Users said they may realize savings from the various deals that vendors are striking.

But not all are ready to place the job of integrating mission-critical business systems in vendors' care.

## Compatibility concerns

Some users are skeptical about the vendors' ability to work together as part of a group such as the OAG, particularly if appli-

cation-to-application interoperability could mean a vendor would lose business to another OAG member. Several of the member companies, including SAP and PeopleSoft, have products that overlap.

"The OAG may work... but I'm not so sure that it is compatible with the cultures of all of the software companies involved," said Carlos Cabrera, director of information services at \$2 million Sun Chemical Corp. in Fort Lee, N.J.

Sun Chemical is installing Marcom's manufacturing applications and financial software from Codes, Inc., also an OAG member.

Although the vendors had agreed to an integration specification, it wasn't a big factor in Sun Chemical's purchasing decision, Cabrera said.

"When we started talking with both Marcom and Codes, I was not even aware of the OAG initiative," he said.

There also are those in the industry who view the preintegration trend as little more than another marketing scheme.

Preintegration is "all about vendors trying to gain credibility in a market where they have none by teaming up with a vendor who does have credibility," said Ed Black, an analyst at Aberdeen Group, Inc. in Boston.

"It's marketing," he added.

## CA price changes announced

CONTINUED FROM PAGE 71

MIPS in their mainframe machines.

Under the new CA prices, Legent customers will pay less for their software, according to Mueller. But the news comes too late for at least one Legent customer — Nevada Power Co. in Las Vegas.

"We're trying to divorce ourselves from CA," due to poor support of Legent products since CA required Legent in August, said Gerald Verchick, MIS facilities manager at the utility. The company uses Legent's Prevalix/XP and SAR system output archival and retrieval software.

"If we put a call in for support, it doesn't get returned for days," Verchick said. The utility intends to migrate its Legent and CA software to other mainframe software vendors.

A CA executive responded:

"Our attempt is to provide a level of support that's at least as good or better than the acquired vendor," said Yogesh Gupta, senior vice president of product strategy at CA. He said he was unfamiliar with the situation at Nevada Power.

CA also has reinitiated Group 90 and Group 100 pricing for its own software, which previously had been capped at Group 80 levels.

Customers who had been paying Group 90 prices, but whose systems now put them in Group 100 or Group 100 price brackets, will be protected by a grandfather clause unless they change their system configurations, Gupta said.

Wade Brown, chief information officer at Washington National Insurance Co. in Lincolnshire, Ill., said the insurance firm will gain from the price breaks on CA-1, CA-7 and other products it uses.

## Tax collectors

CONTINUED FROM PAGE 71

ceeded. The collection system runs on IBM RS/6000 Unix servers linked to the tax board's mainframe databases and a wide-area network of office file servers and workstations.

## Finance applications

The software is a customized version of two AMS software packages for the finance industry: CACS Plus, a program that was originally developed for collecting overdue credit-card accounts, and Strata, a risk-scoring software package that was originally developed to evaluate the risk of loan applications.

The collection system handles bank and corporate taxes. Next year, it will handle personal income taxes, child support payments, vehicle registration fees and court-ordered debts.

## Briefs

## SAS wins \$10M contract

The U.S. Bureau of the Census has awarded SAS Institute, Inc. in Cary, N.C., a five-year, \$10 million contract for unlimited use of SAS's statistical software for several years. The contract will establish SAS software as a "common denominator" for most applications at the agency, a bureau spokesman said.

## Vendor bolsters suite

Manufactures Group, Inc. in

Rockville, Md., has announced several products under the umbrella of its supply chain management software suite. Among these is constrained production planning software that lets companies optimize production of different types of goods across multiple manufacturing sites. Manufactures also announced a three-tier client/server architecture that enables users at remote sites to access and update all supply chain data without having to replicate data or synchronize databases. In September, SAP AG and Manufactures announced an alliance whereby SAP R/3 users will be able to access Manufactures supply chain data via a single R/3 user interface. Pricing of Manufactures' integrated demand, distribution, manufacturing and transportation planning suite begins at \$500,000.

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Dr. James H. Goodnight  
President, SAS Institute Inc.

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## Large Systems

Landmark Systems Corp. has introduced The Monitor 3.0 for DB2, software for IBM's DB2 for MVS/ESA 4.0.

According to the Vienna, Va., company, The Monitor 3.0 is a performance management product that supports IBM's DB2 relational database system. It gathers,

stores and publishes in-depth performance data from computers and applications enterprise-wide. It was designed to let users keep business applications working at peak efficiency.

The Monitor 3.0 supports all DB2 enhancements, including data sharing, CPU parallelism and stored procedures. It also provides performance data for partitioned tables, which helps database administrators manage the perfor-

mance of large DB2 databases.

Pricing for The Monitor 3.0 starts at \$30,000 for a midrange system.

► **Landmark Systems**  
(703) 902-3000

4th Dimension Software, Inc. has announced Control-D/Delivery, an integrated report-distribution management product.

The Irvine, Calif., company said Con-

trol-D/Delivery lets companies that produce reports on mainframe and Unix systems combine the report output of both systems for distribution. Report data and formatting attributes can be transferred between mainframe and Unix systems through a network. The reports can then be sent to any output device, including alphanumeric paggers, fax machines and printers.

Control-D/Delivery compresses and encrypts all data before sending it across a network or between platforms, allowing users to efficiently transfer and exchange business-critical reports as electronic mail. It also provides a central control unit for managing output resources and processes. It runs on Sun Microsystems, Inc.'s SPARCstations with SunOS 4.1.4 or Solaris 2.3, IBM's RS/6000 with AIX 3.2.5 and Hewlett-Packard Co.'s HP 9000 700 and 800 with HP-UX 9.0.x.

Pricing for Control-D/Delivery starts at \$20,000.

► **4th Dimension Software**  
(714) 757-4300

Axis Communications, Inc. has introduced Axis 570 and 670, two network print servers for implementing SNA in IBM mainframe printing environments.

According to the Woburn, Mass., company, Axis 570 (for Ethernet environments) and Axis 670 (for Token Ring environments) offer easy migration of host printing from mainframe and IBM AS/400 systems to LANs without the need to change host applications. The servers were designed for corporations that have both IBM midrange and mainframe systems and that have a specific need for host printing support on a LAN. Axis 570 and 670 can be used to migrate from an installed base of 3x74 control units as well as coaxial and twin-axial attached printers. They use only LAN-based printers without changing the host printing applications.

Axis 570 and 670 natively support all Microsoft Corp. platforms, most Unix environments, TCP/IP dialects, Novell, Inc.'s NetWare, including NetWare Directory Services; IBM's LAN Manager; and Apple Computer, Inc.'s EtherTalk.

Axis 570 costs \$899, Axis 670 costs \$999.

► **Axis Communications**  
(617) 838-1188

MountainGate Data Systems, Inc. has introduced Renegade RAID.

According to the Reno, Nev., company, Renegade RAID offers configurable, fault-tolerant data protection to support RAID Levels 0, 1, 3, 5, 6 and 7. It includes two optional removable drives for increased storage and transportability.

Renegade RAID supports up to 4GB bytes of storage over a fast and wide SCSI-2 host interface. It was designed for imaging and network file server applications. It supports optional redundant AC inputs.

Pricing for a standard system, which includes 10 40-Mbyte, 7200-rpm drive modules, starts at \$29,000.

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Dana Quitlund lives and works on Bainbridge Island, Washington. His office was designed by Wood and Tabor, Ltd., a wholly owned subsidiary of Mother Nature, Inc.

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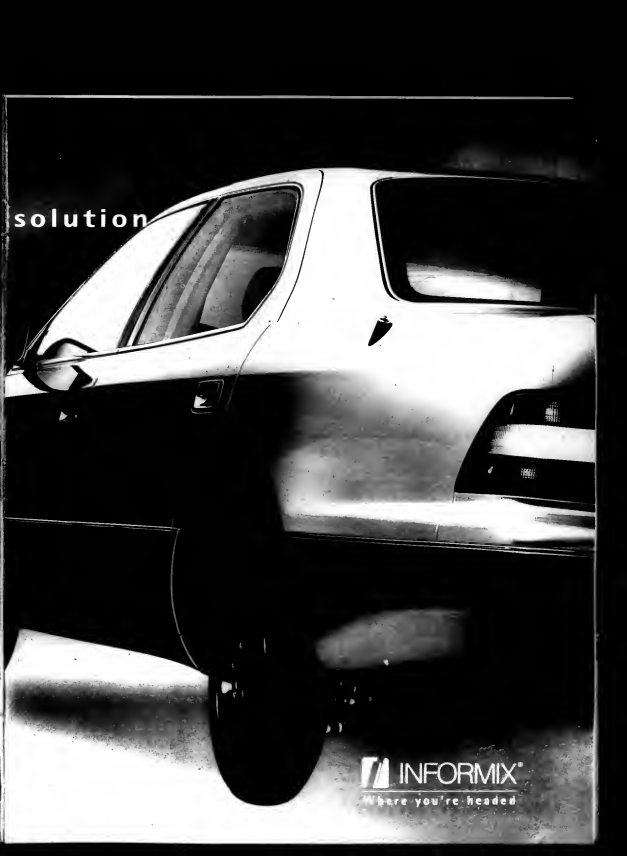
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Luckily, they've cut preparation time substantially since adding SAS software to their menu of productivity tools. "Comparing the SAS System to anything else we've ever used to analyze business data, I'd say SAS software is by far the best," says Gerry Duignault, Region Controller. "There was a time when we had to do things manually. But today, we can review many aspects of our business just by pointing and clicking."

Purina Mills relied on the SAS System to build client/server applications now in use by field representatives and managers at specific manufacturing locations. Duignault adds that "SAS software is so simple to use that even those managers and executives who have not previously used computers feel right at home."

## Feeding Decisions at Every Level

According to Mike Durbin, Supervisor of Information Services for Purina Mills, his department needs to get information to managers as quickly as possible, who in turn must deliver relevant details to upper management as quickly as possible.

"We use SAS software in many areas of operation including budgeting, research, and as a management support tool," says Durbin. "Activities include tracking customer volume, current income, and comparative analyses of income year-by-year."



Duignault, Brown, Durbin

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at the Right Time

Connie Brown, Purina Mills Information Analyst, says the key business benefits of using the SAS System are: "improved productivity by key field management and a consistent thought process in the use of management information. There is no question that field management spends less time gathering numbers and more time using good information to support the decision process. Mapping and graphical presentations are becoming more important in the decision process, and SAS Institute has been very supportive in helping us implement these tools."

"SAS software is doing the job for us," Duignault concludes. "All of our directors will eventually have it available."

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# Application Development

CASE • LANGUAGES • TOOLS

## Clorox cleans up its design process

By Thomas Hoffman

**T**he Clorox Co. last year alone saw new product launches explode by more than 1,400% from the previous year.

With a product database of more than 5,000 items, the company now makes far more than bleach. The problem was, Clorox was having a hard time working around its disconnected packaging design process. The packaging graphics department used Macintoshes but wasn't connected with the folks in Clorox's marketing and producting units, who also need to review the labels for Hidden Valley Ranch salad dressings and other products.

Nor was the graphics department connected to outside vendors for packaging materials. It sent disks out via "Shrinkwrap" or overnight mail. Worse, Clorox graphic designers lost creative time building the disks.

Time lost in this competitive, highly fragmented market is critical, with millions of dollars riding on the successful launch of new products.

"The formula for bleach hasn't changed in 100 years, but Clorox is constantly repackaging for 16-ounce, 32-ounce and lemon-fresh products," said Laurence Plonczynski, chairman and chief executive officer at GS Corp., a Corte Madera, Calif., systems integrator. Clorox hired the firm in 1993 to help fix bottlenecks in its packaging graphics processes.

### Speeding things up

To help speed time to market, Clorox and GS used NextStep Computer, Inc.'s NextStep software to develop a virtual work-group environment, which linked the company's in-house graphics team with outside design, progress and printing firms. At Clorox, GS set up a client/server network of NextStep workstations running on

Intel Corp. clones.

Rapid application development was one of the main reasons GS opted to use NextStep for its work with Clorox, according to John Fox, vice president of technology at GS.

"Plus, all of the same graphical tools are available on NextStep that you can find on the

Mac, and some are better, such as PostScript," Fox added.

The NextStep workstations are connected to the central file server — a Sun Microsystems, Inc. SPARC 20 server — via TCP/IP links. A handful of Apple Computer, Inc. Power Macintoshes running Adobe Systems, Inc.'s Illustrator are connected

to the SPARC server via Network File System connections.

The NextStep system, which rolled out in mid-1994, "has freed up designers from having to make floppy disks and allowed us to get busy creating" labels, said Michael Rutchik, a senior graphic designer at Clorox.



Clorox uses NextStep software to integrate package design internally and communicate more effectively with outside vendors.

### Successful endeavors

Although he declined to disclose Clorox's productivity gains and cost savings from the NextStep systems, Rutchik said the effort has been a success.

"The whole reason you do anything like this is to gain competitive advantage," Rutchik said. "We've done that."

One outside designer agreed. Raymond Wong, a graphic designer at Wilmer Fong Associates, an Oakland, Calif., design firm, said Clorox's Internet-based digital design forum is one to two years ahead of the other consumer products companies his firm works with.

## Progress framework links components

By Frank Hayes

Visual development tools can make quick work of building software. Developers use a mouse to drag prebuilt program components onto a screen, then write a little of Microsoft Corp.'s Visual Basic or scripting code attached to each component and voila — a client/server application.

That sounds great, but in practice those applications often don't have much logical structure behind the graphical user interface. When developers add features, the code behind the screens gets more complex, and the lack of structure on result in software that is almost impossible to support in the future.

"You can get stuff up fast, and you can get in deep, and you can't get out," said Paul Cubage, director of client/server software research at Dataquest, Inc. in San Jose, Calif.



Progress Version 8 adds a set of prebuilt components called SmartObjects to the company's traditional scripting language.

"And those users don't even realize they need help. They just keep moving ahead, getting things done [without realizing] that they're in trouble."

One way of sidestepping that trouble is to use a framework that provides real structure for the components. That is the trick taken by Progress Software Corp. in Bedford, Mass., which rolled out a new version of its fourth-generation language (4GL)-based development system last week.

Progress Version 8 adds a set

of prebuilt components called SmartObjects to the company's traditional scripting language. But the new release also gives developers a framework called the Application Component Environment (ACE), which serves as the plumbing in link components, said Dan Mauro, a systems analyst for the Pueblo County government in Pueblo, Colo., who has tested the release.

The ACE framework guides developers through the process of getting components in a window, then linking them to data sources and to one another.

"Once the links are there, all the communication between the SmartObjects is taken care of for you," Mauro said.

The ACE framework also generates transaction processing and data management code to support databases from Oracle Corp. and Sybase, Inc. **Progress, page B2**

## DBConnect helps with relational data access

By Dan Richman

Like it or not, dealing with C++ is nearly inevitable if you are involved with object-oriented database management systems (DBMS).

At the same time though, C++ applications must also have read and write access to relational data in databases from Oracle Corp., Sybase, Inc. or IBM. This will get easier with software announced last week from Object Design, Inc.

Called DBConnect and intended for use by application developers, the product works with the Burlington, Mass.-based vendor's leading ObjectStore DBMS product. Before DBConnect, it wasn't possible for ObjectStore users to simultaneously access object DBMSs and relational data.

It does this by graphically recording the relationships between relational schemas, or the structure of the data, and

the object model used and then creating a schema map. This map is used at runtime to direct the translation of relational data into objects. No modification to relational schemas is needed.

David M. Kamber, a senior information systems officer at Credit Suisse in Zurich, said he has used DBConnect to access IBM DB2/VS data with the same application programming

interface used for ObjectStore. It offers "great flexibility and has a nice design," he said.

For sites that don't use ObjectStore, an alternative is to use a DBMS that integrates relational and object technology.

DBConnect is due Jan. 1 for SunOS and Solaris, with HP-UX and Windows NT versions due next year. A package that automatically creates the license will cost \$20,000.

**Persistence releases a new "thin" object-to-relational translator.** See page B2.

## Application Development

# Persistence Software slims object-to-relational translator

By Frank Hayes

Trade-offs are an unavoidable part of application development. That is never more true than when developers use an object-oriented language such as C++ to build data-oriented client/server applications.

Object languages make it much easier to create applications that match real business processes, users say. But business-oriented objects don't match up well with the relational databases that typically store client/server data.

Developers can code connections between objects and relational tables by hand, but it takes time and effort.

"There's a lot of ground work you have to do just to use Oracle [programming interfaces] with C++," said George Earle, director of logistics channel development at Non-Stop Logistics, Inc. in San Francisco, which is developing a nationwide grocery distribution system.

## Trade-offs

Developers also can use a software layer that automatically makes a relational database look like a collection of business objects. Unfortunately, that extra layer requires another trade-off—it can add so much code to an application that it becomes too fat to deploy on typical business PCs.

But Persistence Software, Inc. in San Mateo, Calif., last week began shipping a new release of its tool set for mapping relational tables to business objects. Persistence 3.0 can re-

duce the size of the translation layer by 40% to 65%, the company said.

Developers use a visual tool called Object Builder to specify exactly how business objects relate to the data in relational tables. For example, an "order" object may contain references to a customer, products ordered, quantities and prices—data that must be stored in and retrieved from a relational database.

Once the developer has specified the connections between the objects and the database, Persistence 3.0 automatically generates the necessary connecting code. To programmers, the connections look like a set of C++ class libraries, Earle said.

Persistence 3.0, which typically costs about \$30,000, runs on several varieties of Unix and Microsoft Corp.'s Windows NT. But users said the ability to generate very tight code for Microsoft's Windows 3.1 and Windows 95 makes it particularly appealing to shops that want to deploy applications on networks of PCs.

The object-relational mapping layer is also appealing be-

cause it gives developers and database administrators the widest range of options, said Lance LaPlante, a software architect at Shell Oil Co.'s information technology subsidiary in Houston.

## Adifferent route

Shell has built its applications to track and analyze oil exploration using Oracle Corp. databases, but it can't afford to wait until Oracle adds object-oriented features to its database system, LaPlante said. With the object-relational adapter, Shell will be able to either convert to a true object database or a more object-oriented Oracle database, he said.

That may take a while. Object databases have been slow to penetrate most information systems organizations, which are still working to move data from traditional mainframe databases to relational systems. And though relational database leaders Oracle and Sybase, Inc. have discussed moving their databases to a more object-oriented direction by year's end, neither company shows any sign of adding the long-promised object features soon.

## Easy access

An object-relational adapter connects the tables of relational databases to the business data in programs written in C++, Smalltalk and other object-oriented languages. By

shuttling data between the object-oriented and relational worlds, an adapter gives object-oriented programmers much easier access to conventional data.

## Bugs

According to the spokesman, "File not found" appears if the work is being saved in a file that doesn't yet exist on the network, or "Path not found" appears if the file already exists. The only option for users is to click "OK," allowing the program to run without saving the work. If the work is being saved to a local hard drive or a floppy disk, errors don't occur.

Microsoft has acknowledged the bug, which only occurs when Windows 3.1 and Novell, Inc.'s NetWare are used, and is inves-

tigating possible causes.

A Microsoft spokesman said the problem doesn't occur when Visual SourceSafe is used. He said the firm is still considering whether to release a fix.

In the meantime, Microsoft offered a work-around. If the problem occurs, save the application to the local hard drive. Then go to the Explorer feature in Windows and copy the application to the Novell drive.

Griffiths writes for *Computerworld* New Zealand.

## Progress

CONTINUED FROM PAGE 81

Microsoft's SQL Server, IBM's DB2/400, Progress' database, and database drivers that conform to Microsoft's Open Database Connectivity specification.

ACE also allows SmartObjects to be customized or built from scratch using the Progress 4GL.

The SmartObjects can't be used in other development systems the way Visual Basic controls (VBX) can, but developers can use VBXs in their Progress applications. They also can use OLE, the object-oriented com-

munications system built into Windows.

Progress' ACE framework makes it much more attractive than conventional visual 4GLs for heavy-duty work, said an application development manager at an electrical controls manufacturer who has tested the system.

"When you're building big applications, you need something like this that gives you more control over the guts of the code that runs your business application," he said.

Progress Version 8 is available now for \$3,690 per developer. A team version will ship by the end of the year. It will be priced at \$4,400.

SQL Robot 4.0 costs \$2,495 per seat.

►SQL

(617) 852-0110

ParaSoft Corp. has introduced Insure++ 3.0, an error-detection product.

According to the Moorov, Calif., company, Insure++ 3.0 pinpoints errors and bugs for software developers. It detects "most wanted" errors, including memory corruption; operations on uninitialized, null or "wild" pointers; memory leaks; errors that allocate and free dynamic memory; and operations on uninitialized pointers.

Insure++ 3.0 features a graphical monitor utility that helps developers determine memory manipulations and a code analyzer that provides information about which pieces of code have been tested. It is available for Microsoft Corp.'s Windows 95 and Windows NT and Segment Computer Systems, Inc., Sun Microsystems, Inc., Hewlett-Packard Co., Digital Equipment Corp. and IBM platforms.

Pricing for Insure++ 3.0 starts at \$1,995 for a single-machine license.

►ParaSoft  
(818) 305-0041

SQA, Inc. has introduced SQA Robot 4.0, an application testing product.

According to the Woburn, Mass., company, SQA Robot 4.0 lets users create and run automated tests on enterprise Windows client/server applications. It lets users inspect and verify all of the properties and attributes of an object, including invisible properties that can't be tested manually.

SQA Robot 4.0 provides object-level integration with Fw-soft Corp.'s PowerBuilder and Microsoft Corp.'s Visual Basic.

ACT! U.S., Inc. has introduced 4D Server, a tool for developing and deploying workgroup and departmental multiuser database applications.

The Cupertino, Calif., firm said 4D Server is a relational database management system that integrates the client software and server application into the same product. It can function in a team development environment, letting multiple developers access the database application even when the application is on-line and in use.

4D Server lets client software and database applications run on Windows or Macintosh operating systems without any modifications. The Macintosh version of 4D Server runs on Apple Computer, Inc.'s Macintosh and Power Macintosh.

Pricing starts at \$1,295.

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Blue Sky Software Corp. has introduced WinHelp Office 95, a suite of products for help application developers.

According to the La Jolla, Calif., company, WinHelp Office 95 contains RoboHelp 95, a feature that helps automate the process of creating help systems for Microsoft Corp.'s Windows 95, Windows 3.1 and Windows NT. The suite also includes SmartHelp OLE Control, which eliminates the need to program context-sensitive help into applications developed in environments supporting the OLE control standard.

Pricing for WinHelp Office 95 starts at \$549.

►Blue Sky Software  
(619) 459-6365

# Developer finds Visual Basic 4.0 bug

By Doug Griffiths

AUCKLAND, NEW ZEALAND

A New Zealand software developer has found a bug in Microsoft Corp.'s Visual Basic 4.0.

The bug affects developers who have a 16-bit version of Visual Basic 4.0 installed on their PCs. The application is able to load, read and compile files on the network, but when a programmer tries to save work to the network, two possible errors occur, said a spokesman at the developer who requested anonymity.

COMPUTERWORLD NOVEMBER 20, 1995

Kevin invented automatic 16/32-bit thinking.

Bob is an architect of IBM Open Class.

Lee co-wrote the book on the technical use of C++.

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No hype. No rules. Just person-to-person dialogue with the IBM researchers who have helped make C++ what it is today—and who are working on even hotter products for tomorrow. They'll be appearing at our web site in monthly forums devoted to the edgiest topics in the object-oriented world. So bring your ideas and, of course, those burning questions. Our people are eager to talk.

October

Design Patterns  
Visual Programming

John Vlissides  
Rod Smith

November

Writing Efficient C++ Code  
Class Library Design

Kevin Stoodley  
Bob Love

December

Incremental C++  
SOM Programming

Lee Nackman  
Christina Lau

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# Computerworld Editorial Calendar

Oct. 1995 - Feb., 1996

Issue Dates			Editorial Features		Show Distribution & Ad Readership Study Issues	
Issue Dates	Ad Closing Color*	Staff				
Nov 20	Nov 3	Nov 10	<b>Special Report:</b> Electronic Commerce			
Nov 27	Nov 10	Nov 17	<b>Closer Look:</b> Internet Browsers		<b>Mobile World</b> Boston 11/28 - 11/30	
Dec 4	Nov 17	Nov 22	<b>Closer Look:</b> Visual Development Tools		<b>Client/Server World</b> Search Chicago, 12/5 - 12/7 Study <b>DB Expo</b> New York City, 12/5 - 12/7	
Dec 11	Nov 22	Dec 1	<b>CW Guide To: Messaging Software and E-mail:</b> With e-mail going through a major architectural change to client/server, the market will have a very different shape. IS should be able to purchase products that better address company needs. <b>Buyers' Satisfaction Scorecard:</b> Market leading e-mail software <b>Firing Line:</b> Latest e-mail package from a leading vendor			
Dec 18	Dec 1	Dec 8	<b>Closer Look:</b> Contact Management Tools			
Dec 25	Dec 8	Dec 15	<b>Annual Forecast Issue:</b> Choices abound for IS managers in 1996, but the budget and the workday will stretch only so far. Computerworld will draw on the expertise of users and industry figures to help the IS manager solve the mystery of where to invest in 1996. <b>Special Section:</b> Jobs Preview 1996			
Jan 8	Dec 15	Dec 29	<b>Closer Look:</b> Storage Management			
Jan 15	Dec 29	Jan 5	<b>Buyers Guide to Notebook Computers:</b> A look at technology directions in portable computers, tips for evaluating notebooks and an analysis of the strengths and weaknesses of leading notebook product lines.		Search Study	
Jan 22	Jan 5	Jan 12	<b>Special Report:</b> The Best Computer Science and IS Schools			
Jan 29	Jan 12	Jan 19	<b>Buyers Guide to Network Management:</b> How do today's network management packages meet corporate needs, and how will these products and corporate requirements evolve in tomorrow's distributed computing environment? What features should buyers look for, and how do products compare with each other?		<b>ComNet</b> Washington, DC 1/30 - 2/1	
Feb 5	Jan 19	Feb 26	<b>Computerworld Client/Server Journal</b> <b>Extended Enterprise:</b> Integrating external information with existing applications <b>Product Focus:</b> Networking <b>Careers:</b> Team compensation		<b>Networks Expo, UniForum</b> Application Dev. Conf. & Expo Software Developers' Conference Desktop & Client/Server World AIM	
Feb 12	Jan 26	Feb 2	<b>Special Report:</b> Electronic Commerce			
Feb 19	Feb 2	Feb 9	<b>Closer Look:</b> OS/2 and Unix		<b>Networks Expo</b> Boston, 2/13 - 2/15 <b>UniForum</b> San Francisco, 2/14 - 2/16	
Feb 26	Feb 9	Feb 16	<b>Hot Happenings:</b> An IS professional's guide to upcoming conferences and trade shows.			
			<b>Buyers Guide to RAID:</b> Now accepted by corporate users as one of their primary storage vehicles, RAID is being offered at the workgroup and the enterprise levels. A look at issues such as when RAID is the best bet for an application and when it isn't. Experts share advice on how to evaluate RAID products, and offer insight into where RAID can and should go from here. <b>Special Supplement:</b> Top 25 Systems Integrators		Search Study	

**Editorial contacts (508) 879-0700:** Annual Forecast Issue: Paul Gilin, Editorial contacts (508) 879-0700. Closer Look: Johnna Ambrosio, Buyers Guide: James Connolly, Hot Happenings: Alan Allen, Special Report & Electronic Commerce: Joe Maglitta and Bruce Rayner, Parallel Processing, Global 100, Job Satisfaction Survey, CEO Survey, Best Places to Work, Bruce Rayner, Client/Server Journal: Alan Meyer.

\* Include ads within special editorial features and premium positions • Please note early advertising close



# Computerworld Editorial Calendar

March - April, 1996

Issue Dates			Editorial Features	Show Distribution & Ad Readership Study Issues
Mar. 4	Feb. 16	Feb. 23	<b>Closer Look:</b> Web Usage Tracking Tools	
Mar. 11	Feb. 23	Mar. 1	<b>Buyers Guide to Implementing Windows 95 and Windows NT:</b> When is Win95 the right solution? When should you go to NT? What are the implementation issues and costs involved with each operating system? What utilities and applications are available for each?	Starch Study
Mar. 18	Mar. 1	Mar. 8	<b>Closer Look:</b> Remote Access Software	
Mar. 25	Mar. 8	Mar. 15	<b>Buyers Guide to Client/Server Development Tools:</b> Which of the many vendor offerings are best suited for client/server development? Which features top a user's checklist when they are shopping? What benefits are corporations finding as they move to these tools.	<b>Software Developers' Conf.</b> Washington, DC, 3/25 - 3/29 <b>Database &amp; Client/Server World</b> Boston, 3/26 - 3/28
Apr. 1	Mar. 21		<b>Client/Server Journal:</b> <b>Extended Enterprise:</b> The latest in Customer Service <b>Careers:</b> Learning from the Third World <b>Product Focus:</b> Databases	Network + Interop DB Expo SIM CIO Conference Executive Technology Summit Object World
Apr. 1	Mar. 15	Mar. 22	<b>Closer Look:</b> Bandwidth Busting: tips and techniques for users who want better network performance	<b>AINM</b> San Francisco, 3/31 - 4/3 <b>Network + Interop</b> Las Vegas, 4/2 - 4/4
Apr. 8	Mar. 22	Mar. 29	<b>Closer Look:</b> Application Middleware	
Apr. 15	Mar. 29	Apr. 5	<b>Buyers Guide to Enterprise DBMS:</b> A look at the corporate world's options for enterprise database management, ranging from server-oriented DBMSs to those running on traditional hosts. Which category of products is right for various applications? What are the strengths and weaknesses of products within those categories?	<b>DB Expo</b> San Francisco 4/15 - 4/19
Apr. 22	Apr. 5	Apr. 12	<b>Buyers Guide to Distributed Systems Management:</b> Vendors are promising new levels of system management - application management, desktop management and multi-platform management. A look at some of the competitors at several levels with users and experts evaluating the strengths and weaknesses of those products.	<b>SIM CIO Conference</b> Rancho Mirage, CA, 4/21 - 4/23 <b>Executive Technology Summit</b> Rancho Mirage, CA, 4/24 - 4/26
Apr. 29	Apr. 12	Apr. 19	<b>Special Report:</b> Parallel processing	

**Editorial contacts (508) 870-0700:** Closer Look: Johanna Ambrosio; Buyers Guide: James Connolly; Hot Happenings: Allan Alter; Special Report & Electronic Commerce: Joe Maglino and Bruce Rayner; Parallel Processing, Global 100, Job Satisfaction Survey, CEO Survey, Best Places to Work: Bruce Rayner; Client/Server Journal: Alan Alper

Issue Dates			Custom Publications	Show Distribution & Ad Readership Study Issues
Mar. 4			<b>White Paper: Service Solutions for Client/Server</b> (part 4 of 4-part Enterprise Software Directions Series)	<b>Client/Server World</b> Chicago 12/5 - 12/7
Mar. 11			<b>White Paper: Manufacturing Acquisition Strategies: A Guide for User Empowerment</b> (part 4 of 4-part Manufacturing Series)	
Mar. 18	Mar. 24		<b>White Paper: Enterprise Resource Planning</b> (part 1 of 4-part Manufacturing Directions Series)	
Mar. 25	Mar. 29		<b>White Paper: Hierarchical Storage Management</b> (part 1 of 4-part Enterprise Storage Management Series)	Starch Study

**Custom Publications** are written independently of the Computerworld editorial staff. For advertising information on Custom Publications, contact Carolyn Medeiros at (508) 870-7733. Custom Publications have different advertising closes from Computerworld. For deadline information contact Heidi Broadly at (508) 870-8536.

# Management

OUR PICKS FOR THE IS EVENTS YOU GOTTA GET TO

## HOT HAPPENINGS

January-March 1996

**Ah, winter!** Ice storms wiping out the chestnut crop; Jack Frost smashing down the door.

Luckily for you, we've found some worthwhile shows and conferences in early 1996, many in nice, warm locales. Most are technology-focused expos, such as Com-

Net, UniForum and Macworld Expo; you won't find big management confabs in the winter. But IBM-ites can head to Anaheim, Calif., for the annual Share Technical Conference. And if security is your thing, the RSA Data Security Conference shouldn't be missed. **Start packing.**



People watching is part of the fun at Macworld, and don't be shy about lurking in the lobby at the show and in surrounding hotels. Many PowerBook-toting folks are garage-type developers who can't afford a booth but still want to show off their cool products.

### MACWORLD EXPO

Jan. 9-12, San Francisco



The people watching alone makes the largest annual Mac attack a must. The diehards wear their counterculture tie-dye; the venture capitalists looking for the next killer application are the ones in suits. Keep your eyes open for Hollywood celebrities and the occasional rock star. But the products are the real stars. Plan an spending at least an hour at Apple Computer, Inc.'s booth; Apple's enthusiastic and often chatty staffers love to talk about what's coming down the pipe. And be sure to check out even the tiniest out-of-the-way booths for really hip happenings.

**GOOD FOR:** Any IS manager or professional using a Macintosh computer and related technologies.

**SPEAKERS:** Reinstated Apple fellow and Macintosh evangelist Guy Kawasaki is lively, unpredictable and always entertaining. The "Sapcrators of Cyberspace" keynote, moderated by *Hackers* author

Steven Levy, also looks like a winner.

**FEES:** \$150 if registered by Dec. 4; \$175 after that date. Admission to only exhibits: \$25 if registered by Dec. 4; \$40 after that date.

**CONTACT:** Mitchell Hall Associates, Dedham, Mass. (617) 361-2001.

### RSA DATA SECURITY CONFERENCE

Jan. 17-19, San Francisco



If you care about cryptography — and you should, if you care about information security — this is the show to attend. Everyone who is anyone in the field will be there — some 1,000 vendors, consultants, users and academic types in all. The focus is commercial applications of modern cryptographic technology. Cryptography vendors, including sponsor RSA Data Security, Inc., can be counted on to take photos at one another, and nearly everyone will dump on the federal government's export policies and its Clipper proposals for key-escrow encryption.

**GOOD FOR:** Developers, analysts, cryptography researchers, information security technologists and managers, electronic commerce developers and practitioners.

**FEES:** \$495 if registered before Dec. 31; \$605

after that date if space is available (conference organizers advise that the event usually sells out).

**CONTACT:** Lane Kaplan Events, (415) 340-0300, or register on-line at <http://www.rsa.com/>.

### USENIX 1996 TECHNICAL CONFERENCE

Jan. 22-26, San Diego



A major gathering for the Unix tribe, this meeting focuses on the latest technology and techniques that can be applied immediately. Topics include Sun Microsystems, Inc.'s Java; Linux; Internet Protocol Version 6; and Microsoft Corp.'s Windows 95 and NT. The keynote, on the interplay of Unix and networking, is by Van Jacobson, a scientist at the Lawrence Berkeley National Laboratory.

**FEES:** \$230 to \$500.

**CONTACT:** Usenix Conference Office, Lake Forest, Calif. (714) 568-8648.

## INSIDE:

A book review and an interview with digital economist Don Tapscott. See page 89.

## DEMO '96

Jan. 28-31, Palm Springs, Calif.



**GOOD FOR:** Anyone who wants the lowdown on new products from those who put their reputations on the line developing them.

**FEES:** \$1,505 if registered before Dec. 23; \$1,965 after that date.

**CONTACT:** InfoWorld Editorial Events, San Mateo, Calif. (800) 633-4312.

With golf and tennis tournaments, a jam session, water gun fights, human-reeling ball races and remote control car races on the agenda, this obviously isn't a formal trade show. But that's part of the fun at this relaxed annual product demonstration event at the Stouffer Renaissance Esmeralda Resort. And you have to love any conference that asks for your shirt size on the registration form.

Demo '96 is all about products, products and more products. But the format is offstage demonstrations to small groups (each of the 80 demonstration areas has a desk, three chairs and a nice plant) and general-session onstage demonstrations. That makes Demo '96 a good way to get on-up-front and personal look at new products and technologies.

## COMNET '96

Jan. 29-Feb. 1, Washington



**GOOD FOR:** IS managers and professionals who design, build or maintain enterprise networks.

**SPEAKERS:** Eric Schmidt, chief technology officer at Sun Microsystems, Inc.; Nicholas Negroponte, director of the MIT Media Lab; James Barksdale, CEO of Netscape Communications Corp., and Edward A. Bennett, CEO of Prodigy Services, Inc.

**FEES:** \$395 for one day to \$1,250 for the works if registered before Dec. 15. Fees are higher after that.

**CONTACT:** MHA Event Management, Norwood, Mass. (800) 225-4695.

Last year's Comnet drew more than 42,000 people interested in networking and communications technologies. And with more than 450 exhibitors scheduled this year, you'll be hard-pressed not to find a vendor you'd want to talk to. The keynote addresses are interesting, but this year's plenary sessions look more intriguing. Sessions focus on areas such as virtual LANs, multimedia networking, Asynchronous Transfer Mode (ATM) and wireless communications and doing business on the Internet.

ATM sessions have drawn huge crowds. Most have chairmen and panelists from ATM vendor companies but tend to be informative just the same. The ATM Technical Update could be the best for catching up on the hottest developments. You can bet George Dobrowski, broadband project director at Bellcore and chairman of the ATM Forum Technical Committee, knows his stuff.

## UNIFORM '96 AND ENTERPRISE SOLUTIONS EXPOSITION AND CONFERENCE

Feb. 12-16, San Francisco



The Official Conference and Exposition for Open Computing Solutions

If you want to blend Unix systems into seamless networks with lots of Microsoft Windows-based clients and Windows NT-based servers, you will hear all the how-to strategies at UniForum '96. The Unix-centric show will stress the role of Unix servers as mainstays of enterprise systems and keepers of corporate databases. Planned keynote speakers include IBM Chairman Louis V. Gerstner and Hewlett-Packard Co. CEO Lewis Platt. Fees: \$445 for one day to \$4,795 for five days, depending on what you register for and when; fees go up after Dec. 31.

**CONTACT:** Softbank Comdex, Inc., (617) 433-1500.

## SHARE TECHNICAL CONFERENCE

March 3-5, Anaheim, Calif.

One of two mainframe-derived IBM user groups, Share, Inc. has sponsored conferences for 30 years. Its agenda has branched out to include almost all aspects of IBM, but System/390 shops are the rule here. This is one of the few places where you will find more OS/2 users than Windows users. The conference is good for getting technical updates on IBM products straight from the horse's mouth. About 50 other mainframe-oriented software and storage vendors also participate. There are also user presentations and a technology exhibition. Oh yes — Mickey and the gang are nearby, too.

**GOOD FOR:** Organizers say their confab is for database administrators, capacity and performance planners, operations managers, programmers and network engineers. But folks looking for an information technology education won't be turned away.

**SPEAKERS:** David Barnes, OS/2 program manager, and Paul Gungurum, workplace operating system

lead architect, are two of the IBM officials speaking.

**FEES:** \$985-\$745 for members; \$985-\$895 for non-members.

**CONTACT:** Share, Inc., Chicago, Ill. (312) 823-0932; Internet: share@share.org; World Wide Web: <http://www.share.org/>

## DATABASE &amp; CLIENT/SERVER WORLD

March 26-28, Boston



Database & Client/Server World

This conference tends to be a mix of technology tutorials and vendor tip service. Avoid the panels that focus on vendor strategies — they often degenerate into little more than product pitches. The forums on parallel databases, data warehousing, distributed objects and middleware usually tunnel deeply into the technologies' inner workings. Usually facilitated by practitioners or consultants, these discussions tend to be fairly technical and provide reasonable advice.

**GOOD FOR:** Midlevel IS managers, project managers, application developers and advanced technology gurus.

**SPEAKERS:** Steve Mills, general manager of IBM's Software Solutions Division, is an excellent speaker; his perspective on technology is insightful. Mitchell Kertzman, former chairman of Powersoft Corp. and now part of Sybase, Inc.'s Inner elite, is informative, witty and has a good perspective on where client/server is heading. And John Donovan, chairman of Cambridge Technology Partners, will surely deliver his usual pitch on better systems through re-engineering and rapid application development.

**FEES:** \$995 for a three-day package.

**CONTACT:** DCI, Andover, Mass. (508) 470-3880.



Computerworld staff members Alan Alpert, Allen E. Altier, Gary H. Atkinson, Jean H. Bosman, Kevin Barden, Lisa Fiorillo and David Widdow contributed to this report. Our regular weekly calendar listings continue next week.

# Hold On, Help Is On The Way!

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Computerworld

**COMNET**

# Don Tapscott, digital economist

*The "Age of Networked Intelligence" will create challenges for IS, says the re-engineering guru in his book: The Digital Economy. Jean S. Bozman interviews the author and reviews the book.*

## INTERVIEW



Don Tapscott predicts future of digital economy

**CW:** When will the new "digital economy" arrive?

**Tapscott:** The '90s and the beginning of the next decade will be a period of transformation where there will be convulsive changes in business, technology and the relationship between the two. And the punishment is proving to be swift already for companies [that] can't understand how the rules of the new economy are different.

**CW:** What should information systems managers do to prepare? How can the Internet be used to support information technology functions that are new on private networks?

**Tapscott:** For some time now, IS managers have had to think about enterprise computing and linking up with customers, suppliers and even competitors. The new economy brings a rich, deep, publicly available infrastructure whereby more transactions, commerce and human communications come onto [the Internet and] public networks. Every information technology manager needs [to start migrating] functions that previously were done internally onto the public utility and [do so] in a timely and security-conscious fashion.

**CW:** How should IS be organized to cope with network-based computing?

**Tapscott:** In general, [the idea is] to break down the walls between IS and the business. Many functions that are currently central need to be moved down into the business. Many other functions need to be tightly managed at an enterprise level.

**CW:** Will IS organizations need a blueprint for distributed computing?

**Tapscott:** The Internet is just the tip of the iceberg in terms of the type of infrastructure that will evolve. It's a network of networks, which is based on standards, but it will change dramatically. It's just a tiny taste of the function, capacity and services that the new utility will provide.

**CW:** You say there's a need for continuous learning by employees in the new economy. How will that apply to IS professionals?

**Tapscott:** They can expect to fundamentally reinvent their entire knowledge base many times in [their adult lives]. And we're also going through radical changes in the tools we're using. It's like working with Netscape's [Internet browser]. It wasn't around a year ago, and all of a sudden, everybody's got to know about it. In many ways, a cultural change has to take place as IS professionals develop their specific areas of expertise and acquire an intimate knowledge of the business needs of their clients, business partners and suppliers.

**CW:** Will companies still need chief information officers in the digital economy?

**Tapscott:** Yes, there's a real role for the champion, the change agent, the protector of the corporate [information technology] infrastructure.

## BOOK REVIEW

**THE DIGITAL ECONOMY — PROMISE AND PERIL IN THE AGE OF NETWORKED INTELLIGENCE**

By Don Tapscott

(New York: McGraw-Hill Books, 1995, \$24.95, 342 pages)

Donald Tapscott focused on business process re-engineering and its impact on business and information systems in the book *Paradigm Shift: The New Promise of Information Technology* (McGraw-Hill Inc., 1993), which he coauthored with Art Caston. In his new book, *The Digital Economy — Promise and Peril in the Age of Networked Intelligence*, he tackles a much broader topic: the digital makeover of the world economy.

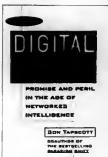
Tapscott's book is aimed at a general business audience. It outlines the impact on the enterprise of the emerging computing and communications technologies, including the Internet.

The book covers a wide range of topics, including the Internet's encroachment on everyday life, television viewing habits, new educational techniques and the globalization of business.

Still, Tapscott clearly hasn't forgotten about IS managers. He argues that IS professionals will play a key role in making the digital economy work by building and controlling the computer networks that drive every other facet of business (see interview at left).

IS managers may want to skip the sections dealing with general technology trends they already know, although those sections are fun to read (such as the parts about "information highway roadkill"). Fortunately, the book was written in a modular fashion that lets readers skip through the table of contents to find specific topics.

Important chapters devoted to IS concerns include Chapter 4's outline of new technology trends in client/server systems and open networks, and Chapter 5's discussion of data exchange through "in-



ternetworked business" links between manufacturers and suppliers.

Tapscott writes in Chapter 10 that an IS realignment is inevitable. The advent of multimedia, desktop videoconferencing and distributed computing will force permanent changes in IS management issues and provoke a redefinition of chief information officer leadership, he says.

The book is a worthy read for IS managers, who will be able to compare their plans for the Internet and emerging network-based information technology systems with Tapscott's vision of the digital world.

It's worth noting that a lot of the book is based on findings from the Alliance for Computing Technologies, which is chaired by Tapscott. The group is a coalition of 30 high-tech businesses and government agencies. Each business or agency contributed \$100,000 to fund the year-old group and study "the impact of new media on business," Tapscott says.

Bozman is Computerworld's senior editor; open systems.

# Web Payoffs NOW

Smart pioneers aren't waiting for Internet nirvana to reap benefits and expand on the World Wide Web

BY JOSEPH MAGLITTA

**P**opular wisdom says *real* Internet-based commerce will come only when Netscape is bulletproof, digital purses sing. Hot Java perks everywhere and all animals live in peace.

Bunk, say Fidelity Investments, FedEx Corp., G. E. Plastics and others. These commercial pioneers say they are starting to see early payoffs from handling limited customer service, sales support and marketing on the World Wide Web. And we aren't talking about posting the company phone number, hawking flowers and adult novelties or taking bets at some Caribbean cyberkeno parlor.

"Everybody and their brother is slapping up on-line advertising and brochures," says Michael W. James, vice president of electronic commerce and logistics marketing at FedEx. "But the ability to have a real-time dialogue with customers is absolutely what builds loyalty. Interactivity is the way to be."

The Memphis-based express carrier launched its Web page (<http://www.fedex.com>) last fall. Today, James says, some 60,000 new Web users order supplies, get FedEx numbers, download shipping software and more. "Every day, between 8,000 and 9,000 people track their packages" via the Internet page, James says. Usage is doubling or tripling monthly, he adds.

While much attention has been focused on on-line hying and selling, consultants and companies say less obvious activities may offer greater opportunity for information systems and its partners. Among them are instant market research, sales-lead generation, presales and postsales support, inventory checking, recruitment, image building, information dispersal via catalogs, parts lists, directories and so on.

"Many people have overlooked this quiet side of [the] Internet," say Mary A. Modahl and Sara H. Eichler in a recent Forrester Research, Inc. report titled "The Internet Economy." They say many of the 10,000 or so corporations with Web pages could use them to "improve business practices, expand communications and smooth internal operations."

Because most Web efforts are still in their infancy, companies say they still are gathering and analyzing hard numbers and won't reveal whether savings have outweighed start-up costs.

But business executives clearly like what they're seeing, real and potential cost savings in printing, distribution, storage, toll-free telephone calls, sales calls, help desks, recruiting, advertising, software distribution and clerical support.

"We see this as a low-cost way for Grainger to reach international customers," says Martha Frey, director of catalog marketing at W. W. Grainger, Inc. in Lincolnshire, Ill. Ultimately, Frey says, the Web will make it easier and cheaper to do business with the \$3 billion industrial parts wholesaler and distributor.

Indeed, early Web implementers say even simple, low-cost steps such as uploading existing documentation can yield big payoffs. The following are examples of those payoffs:

• Schlumberger Ltd., a \$6.5 billion oil field service and manufacturing company, no



Launched this summer, Saturn's colorful home page already pulls in 35% of company brochure requests. A built-in "family database" lets owners locate and send electronic mail to one another. ES is helping Saturn expand and integrate with other General Motors pages.

longer prints quarterly reports, says David P. Sims, director of the Schlumberger Information Network. Instead, results are posted on the Web page (<http://www.slb.com/home/html>), saving the Houston-based firm global printing and distribution costs.

Similarly, after analyzing customer needs, G.E. Plastics found demand for global, around-the-clock access to current technical information. So last October, the \$6 billion Pittsfield, Mass., manufacturer mounted 3,000 pages of data on thermoplastic resins on General Electric Co.'s first Web page (<http://www.ge.com/gep/homepage.html>).

Visitors can read detailed properties and guides for each material, review design and processing guidelines, locate and contact customer support centers, read about the latest products and download the "G.E. Select" database for Macintoshes or PCs.

"We used to have 10 million pieces of literature that was obsolete before it hit the shelves," says Rick Pocock, manager of marketing communications. "Now the printed literature itself is obsolete."

By letting users download any of 160 prospectuses, Boston-based Fidelity has cut the time needed to deliver materials from days to minutes "at a fraction of the original cost," says Zachary Leonard, director of interactive programming (<http://www.fid-lav.com>).

Such widening use brings new pressures to IS groups. One high change, says Tom Gernon, director of interactive client systems at IS groups. One big change, says Tom Gernon, director of interactive client systems at IS groups. One big change, says Tom Gernon, director of interactive client systems at IS groups. One big change, says Tom Gernon, director of interactive client systems at IS groups.

Spinning interest also thrusts IS into much closer proximity with other business groups. Indeed, IS at every company is contacted by *Computersworld* had regular meetings with representatives from as many as 10 functions.

Currently, only a small percentage of companies have linked their Web pages to legacy databases, notes Robin Palmer, national leader for electronic commerce at KPMG Peat Marwick in Palo Alto, Calif. For obvious security reasons, most run off-line Web servers without any connection to existing systems.

"Right now, the jump beyond the home page into legacy systems is wrought with all sorts of security issues," says Mark Broffman, principal at EBS Management Consulting's communications and electronic practice in Roslyn, Va. "The great majority of people have firewalls."

Consultants say new tools, due in the next 18 months, will make it easier to link Web pages with legacy databases and systems. Informix Software, Inc., Oracle Corp. and Sybase, Inc. all plan to release new products.

But the task also will become more difficult due to sheer technical complexity, uncertain security, rising user and customer expectations and a growing need to link internal systems and customers.

Consultants say smart IS groups won't sit twiddling their thumbs. They advise strengthening network infrastructures, seeking partnerships with marketing and customer service groups and building transaction and security skill sets — even if firms eventually opt for a third-party provider.

"IS must be involved now," warns Jim Sterne, president of Target Marketing, Inc., a Santa Barbara, Calif., Internet consultancy, "or run into problems down the line."

Magnin is *Computersworld*'s senior editor, re-engineering/corporate strategies.

## Saturn Corp.

### Automaker

<http://www.saturncars.com>

Launched: March 1995

Who did work: Hal Kiney & Partners, Inc., Organic Online, Inc.

Traffic: 84,000 people a month reading 277,000 pages

Vision: Use Web to build image as innovative company; build customer relationships

What you can do: View 1996 models, find a retailer, read *Saturn* magazine, order brochure, locate and write other owners via bulletin board

Payoff: 25% of brochures (about 2,000 a month) requested via Web

Biggest surprise: Difficulty in linking Web page with fulfillment house

Next steps: E-mail, standardize with other Saturn pages, link to other pages from General Motors Corp.

The "You definitely want to have all your resources in place so you can handle the traffic you'll generate." — Diane Romanelli, advertising coordinator

## RESOURCES:

### BOOKS

Flip past the technical basics and use these books to get a marketing mind-set and big-picture overview:

*Doing More Business on The Internet* by Mary J. Cronin, \$29.95, (800) 842-5636

*Guerrilla Marketing Online* by Jay Conrad Levinson and Charles Rubia, \$12.95, (800) 225-3562

*Cyber Marketing* by Len Koehler, \$24.95, (800) 282-9659

*Frontiers of Electronic Commerce* by Ravi Kainola and Andrew B. Whinston, \$49.50, (800) 825-6559

*Online Marketing Handbook* by Daniel S. Jassal, \$24.95, (800) 842-3636

*Detour: The Truth About The Information Superhighway* by Michael Sullivan-Trainer, \$22.95, (800) 782-2974

### ON-LINE

"Electronic Commerce," helpful and comprehensive overview of articles, books, guides, events, products, vendors and discussion groups. <http://galaxy.elnet.net/galaxy/business-and-commerce/electronic-co>

"Buyers Guide to Electronic Commerce," Products, groups, resources, guides and so on. Commercially sponsored. [www.westworld.com/buyersguide/#p2](http://www.westworld.com/buyersguide/#p2)

"The Web 100 List," Ranking of big-business commercial sites with links. [http://bx.ssta.ca/~at\\_info/w100\\_table.html](http://bx.ssta.ca/~at_info/w100_table.html)

"Internet-related Conferences and Symposia," Lots from all over the world. <http://www.austemair.com/conferences/index-conf.shtml>

### REPORTS

"Internet Security: The Impact of Firewalls on Client/Server Applications," Report covers market, vendor and user strategies. Input, (415) 961-3300, <http://input.com>, <http://www.input.com>

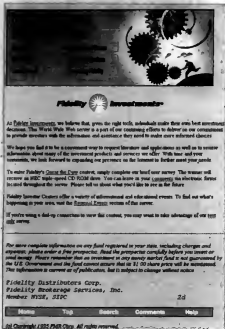
"The Forrester Report," Concise, smart, frank and sometimes flip. Quality thinking packed with practical advice for IS. Recent and worthwhile: "The Customer Voyage," "CRO Meets Internet" and "Beyond Internet Giga," (617) 487-7000, <http://www.forrester.com>

DOING BUSINESS  
ON THE INTERNET

GUERRILLA  
MARKETING

MARKETING

FRONTIERS  
ELECTRONIC  
COMMERCE



Fidelity's new home page lets visitors figure retirement savings, download prospectuses, check on 560 mutual funds and more. Next step: expand to serve institutional investors and brokers.

### Fidelity Investments

**\$14 billion mutual funds investor**  
<http://www.fid-inv.com>

**Launched:** February 1995

**Who did work:** Five-person internal group

**Traffic:** 3.5 million hits as of Nov. 1

**Vision:** Use Web as new distribution and sales channel

**What you can do:** Review and select 560 mutual funds, plan college and retirement savings, download software demos, participate in survey and "Guess The Dow" contest

**Payoffs:** Undisclosed savings in mailing, handling and printing from electronically delivered prospectuses; 2,000 comments and suggestions from users; undisclosed number of new accounts opened

**Biggest surprise:** Staffing needed to mount and maintain new content

**Next steps:** On-line forums with managers and analysts, downloadable applets, expansion to institutional investors and brokers

**Tip:** "It's never a wise move to have the systems group determine content. Our strength is that we understand the types of things that can be done."

—Tom Gernon, director of interactive client systems

### FedEx Corp.

**\$9.4 billion express transport**  
<http://www.fedex.com>

**Launched:** November 1994

**Who did work:** Three to four in-house staffers trained by CommerceNet

**Traffic:** 16,000 pages transmitted monthly

**Vision:** Lure and keep Web users as part of decade-old plan to put FedEx on every desktop in the world

**What you can do:** Track packages, check worldwide service, download shipping and tracking software, get FedEx account number, link to CommerceNet

**Payoffs:** Undisclosed cost savings from reduced load on toll-free operators; elimination of paperwork for FedEx and customers

**Biggest surprise:** Complexity of graphics programming

**Next steps:** Real-time marketing, targeted advertising

**Tip:** "HTML scripts are easy from a developmental standpoint. Most of the work is in the back-end systems." —Miley Atinsworth, director client/server development

### W. W. Grainger, Inc.

**\$3 billion wholesaler and distributor**  
<http://www.grainger.com/index.html>

**Launched:** June 1995

**Who did work:** Sybase consultant and internal staff

**Traffic:** 3,000 pages downloaded weekly

**Vision:** Create low-cost way to expand sales reach; lower acquisition costs for customers

**What you can do:** Search product databases, review new products, locate branches worldwide, send E-mail, order catalog

**Payoff:** Detailed customer demographics and feedback helps set direction

**Biggest surprise:** Number of support calls about user browser problems

**Next steps:** "Big and nasty firewalls," continued customer interviews, mount more technical documentation

**Tip:** "I wouldn't jump in and say, 'You're only doing Netscape browsers and/or NCSA ATTP servers.' Things are still evolving so rapidly. Stay open-minded."

—Jeff Brandon, project manager of emerging technologies

### Hyatt Corp.

**International hotelier**  
<http://www.travelweb.com/hyatt.html>

**Launched:** October 1994

**Who did work:** Hotel Industry Switching Co. consortium

**Traffic:** Undisclosed consumers and travel agents

**Vision:** "One-to-one marketing with customers"

**What you can do:** View 1,200 screens for 196 Hyatt hotels and resorts, get chain info, E-mail, link to other travel-related sites and information

**Payoff:** Year's worth of learning about customer usage patterns

**Biggest surprise:** Enormous effort needed to gather information on hotels and guests

**Next steps:** On-line reservations; guest-recognition system; merger with travel, reservation and other key databases

**Tip:** "Using the [industry consortium] definitely was competitive on a page-by-page basis with using a commercial Web shop and webmaster."

—John P. Larin, corporate director, travel industry





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The Architecture for Change

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**What will the Internet look like in 1997? In 2000? How about electronic commerce? What corporate computing platforms will be required? *Computerworld* asked some 'net notables for their predictions.**



**Leonard Kleinrock**  
Chairman of the computer science department, University of California at Los Angeles  
lklein@cs.ucla.edu

**1997:** Much activity on the Web will continue to be a *Field of Dreams*, namely, build your page and they will come. The absence of good, integrated overall directories will inhibit useful navigating. Lots of grey-whiz multimedia will be thrown up with little real business use. Pricing will still be a total mystery for most network and application service providers.

Trade will begin to flourish as suitably secure payment mechanisms become available. Serious Internet electronic data interchange (EDI) will emerge. Individual vendors will try to establish de facto standards, creating chaos. In the backbone, we'll see movement from frame relay at T1 speeds migrate to T3 speeds in select markets.

**2000:** The dream becomes reality. Intelligent agents will abound, as will browsers with real directories and search engines. Intelligent agents will assume much more network management control and decision-making. Asynchronous Transfer Mode networks will be deeply deployed in backbone WANs; look for gigabit speeds on commercial LANs. Security and interoperability continue to be problems.

**Platforms:** In 1987, desktop platforms will be powerful workstations tightly connected to corporate LANs and WANs. By 2000, business users will have portable devices powerful enough to use as primary platforms on the road, at home and in the office. Nontraditionally enabled applications will be the rule.



**Mary J. Cronin**  
Professor of management, Boston College, and author of *Global Advantage on the Internet* (Newstrand, 1996) and *The Internet Strategy Handbook* (Harvard Business School Press, 1996)  
mcronin@bcvmcs.bc.edu

**1997:** The Internet will look more secure, easier to navigate and a lot more straightforward to access. Still, only a small percentage of businesses will be handling on-line commercial transactions. There will be a lot of concern about security and skepticism about the commercial value of the Internet.

But 1997 will be a breakthrough year. A critical number of companies will be using electronic commerce for business-to-business communications, marketing and sales. The U.K. and Japan will become full-fledged players.

**2000:** Electronic commerce will be the norm for all types of businesses. Location will be far less important than on-line presence and products. If companies can't use the network to send and receive information, they will be shut out of the mainstream. Businesses with offerings that are flexible and suited to a personal, global Web environment will flourish.

**Platforms:** Companies will need combined hardware/software/networking tools that provide full, secure multimedia access, rapid response times and simplicity of use. But the major factor in effective use will be how companies organize and empower staff. Companies that use the Internet to become more agile, responsive and global in daily operations will gain advantage.



**Ben Barker**  
President, DataRace, Inc.  
barker@dataRace.com

**1997:** Commercial use of the 'net will be dominated by E-mail and Web surfing. One exception will be the emergence of secure, standardized Internet EDI. Thanks to ubiquitous Internet connectivity and public key encryption, companies will save millions in value-added network charges.

**2000:** Growth of the Web will be spectacular, particularly as Netscape Communications Corp. and Microsoft Corp. deliver tens of millions of copies of security products.

Only the largest Internet Service Providers that have transitioned to an ATM/dark-fiber backbone will be competitive. Commercial-quality voice will be carried over the 'net, so regional Bell operating companies will feel a strong pinch. ISDN will likely be ubiquitous; Cellular Digital Packet Data will be broadly available in support of multimedia digital service for mobile workers.

**Platforms:** A gold-plated product is the IBM ThinkPad 700C. It has a fold-out keyboard, large color display, large disk and RAM, built-in fax modem, full-duplex speakerphone and answering machine. Personal digital assistants will remain a curiosity.



**Jay M. Tenenbaum**  
Chief executive officer, Enterprise Integration Technologies, Verifone, Inc.  
jmt@etl.com

**1997:** Internet commerce should be firmly established, with as many as 20 million consumers and 250,000 merchants actively participating. This explosive growth will be driven by three-dimensional graphics that make shopping entertaining and revolutionary business processes that enable merchants to offer solid values.

Most purchases will still be made manually using Web browsers and paid for with credit cards. Payment standards will continue to proliferate as major players from the worlds of finance and technology stake their claims.

**2000:** Many purchases will be made directly from within Web-enabled applications. Computer agents will do comparison shopping and locate the best prices for specific goods or services. Agents will also function as brokers, bringing Internet buyers and sellers together and charging a fee for services. Smart-card readers and writers attached to or integrated with PCs will become nearly as commonplace as modems, enabling electronic cash transactions.

## @dvice

"I don't think it's too early to start thinking about data warehousing and integrating the Web with relational databases. We have the tools. It's more a state of mind."

**Robin Palmer, national leader for electronic commerce, KPMG Peat Marwick**

"In many cases, companies lack the infrastructure to respond to the hits they are getting. And they are not necessarily providing a sufficient security of individual to deal with the E-mail that is coming through."

**Mark Brentman, principal, communications and electronic practice, EDS Management Consulting**

"Overburdened 800 lines and voice-response units can be relieved by a well-organized Web site. This is not only a cost-savings, it's better for the consumer."

**Marya A. Medschi and Sara H. Eichler, analysts, Forrester Research**

"If you go to an outside source to create your Web page, the drawback is the difficulty in tying the system back to the data center, which eventually must be done."

**Jim Storm, president, Target Marketing**

"Information technology people... have to understand the capabilities of the 'net and what can be done and what it means to marketing people."

**Andrew B. Whitson, professor, University of Texas at Austin and co-author of *Frontiers of Electronic Commerce***

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# In Depth

## If you start now . . . YOU JUST MIGHT MAKE IT



**When the date changes in the Year 2000, it will wreak havoc on systems, throwing calculations out of whack. Yet few companies are tackling the problem. Are you prepared?**

By Peter de Jager

**I**'m an idealist. It's an affliction and a strength. It means I like accuracy — not "as accurate as possible" but "dead accurate." I don't like ambiguity, and I don't like unnecessary risk — especially risk with unknown and largely injunctive consequences.

In a way wonder I've become obsessed with the Year 2000 date problem?

To recap: Most applications store year data in two digits. Our systems assume those two digits

(say, 94) are prefaced by 19 (e.g., 1994). When the year becomes 00 in 2000, most applications will assume 1900, causing system failures and invalid reports.

Based on conversations with hundreds of companies, consultants and vendors, I've concluded that less than 20% of organizations worldwide are addressing the Year 2000 date problem. And most of these are only at the initial stages of planning (see story below).

Solving the problem is actually a trivial exercise for any program.  
*Year 2000, page 26*

### COMPANIES COME CLEAN

**They may not have all the answers, but at least these forward-thinking firms are doing something**

Only about 20% of companies today are addressing the Year 2000 date change problem. Most of these pioneering companies are in the very early stages of tackling this issue. They are raising awareness of the problem, assessing which systems are affected and planning a course of action. Few actually have started to tinker with their code.

#### Internal Revenue Service

"This is not a problem we can solve by depending on superhuman effort. It's too big. It requires planning."

So says Julia McCreary, re-engineering technical manager at the Internal Revenue Service in Washington. The IRS is faced with fixing 6,500 applications to accommodate the Year 2000 date change.

What happens if the IRS doesn't fix the problem? McCreary's a re-  
*Companies, page 26*

### WALLET BUSTERS

**Worldwide cost to address the Year 2000 date change:**

**\$100 BILLION TO \$600 BILLION**

This cost includes inventory and finding and fixing date fields as well as testing. It does not include changing forms to accommodate the extra date field.

**Fix-it costs per line of code:**

**\$1**

This does not include documentation, training and final implementation testing.

Source: The Barker Group, Inc. These costs are estimates.

## Year 2000 Problem



Continued from page 97

mer. It consists of expanding the year by two digits or expanding the date field to include a century field (flag or use date logic).

Your programmers also need to take into account that 2000 is a leap year. Otherwise, your applications

won't know what day of the week it is after Feb. 28, 2000.

But many companies have more than 50 million lines of code to search to find these date problems, and a diminishing number of days remain to meet what is a fixed deadline.

If for those 50 million lines you assume it will take one second to fix, test and implement the change per line of code and you work eight hours per day, five days per week, 50 weeks per year — that's just about seven years of effort. (Yes, I know that's a ludicrous way to size the project, but it's a start.)

### SIMPLE PROBLEM, UGLY SOLUTION

Attacking the date change early could give you a competitive edge

By Kathy Shaw

**T**he Year 2000 date problem is "such a simple problem to understand, but the solution is so ugly," says John Phelps, research director at the Gartner Group, Inc.'s Data Center Strategies services in Atlanta.

Even with the variety of automated tools available, he says, companies will still have to do a lot of manual work. Programs with no source code or those with hard-coded year changes are particularly scary, explains Bill Goodrich, editor and publisher of the Year 2000 newsletter "Tink, Tink, Tink" in New York.

In spite of being called "alarmist," Phelps describes the Year 2000 problem as a "crisis unprecedented in the computer industry" for three reasons: • For the first time ever, here is some-

thing that HAS to be done, as opposed to something the moving to client/server, which is a choice.

• There's no immovable deadline. This project can't slip six months without serious repercussions.

• It is the first time there is no real business driver to taking action — other than to stay in business.

Companies are afraid to discuss their Year 2000 actions — or lack thereof — Phelps says, for fear that customers will think this is just their problem, and a general problem, and perhaps lose confidence in them.

"What I believe," he says, "is that if a company has handled the Year 2000 date problem and steps forward and says they've done it, that is a competitive advantage."

Good is a Computerworld senior editor. In Depth.

What do you do first? What system dependencies exist? When will vendor software be ready to communicate with modified systems? How will vendors change their software? Can you start before they finish? This is the biggest project management challenge you'll ever be involved in, and it'll require the tightest controls you can enforce because the deadline won't be extended.

This obsession of mine has resulted in various titles: "Digital Cassandra," "Chicken Little," "Millennium Moser" and "Doomsayer." Some people shoot the messenger... Such is life.

But the problem is real. Kathy Benson, project manager at IBM, puts it simply: "It is imperative that customers upgrade all of their software, operating systems and applications to current versions. Otherwise, they may have problems after Jan. 1, 2000."

The date problem isn't striking just mainframes. Try this: Year 2000, page 100

## 10-STEP PLAN TO YEAR 2000 COMPLIANCE

1. Make sure all your software VENDORS are addressing Year 2000 compliance
2. Set up a CHANGE CONTROL system to make sure changes will be valid
3. Do INVENTORY of all in-house programs and program files
4. CLEAN UP inventory (i.e., get rid of duplicate and outdated programs)
5. Do an impact ANALYSIS that determines which programs have critical date problems, such as those in which the date field is used for comparison or computation. Hierarchical date problems, such as what date shows up on a report, might be cosmetic. Add up which programs and how many references there are to be fixed to estimate project parameters — how many people will be needed and how long it will take them.
6. Define project stages and PRIORITIZE
7. IDENTIFY fields and files to be changed
8. CHANGE them
9. DO TESTING, which is estimated to be the biggest and most time-consuming stage of the project
10. Don't miss this rare opportunity to DOCUMENT what you've done. This information will be an invaluable decision-making resource if you ever have to deconvolve, for instance,

Source: Bill Goodrich, editor and publisher of Year 2000 newsletter "Tink, Tink, Tink"

Continued from page 97

sponse is a determined one: "We count every penny of income in the U.S.; we can't fix it!"

### Social Security Administration

The Social Security Administration (SSA) in Washington also has a we-can't-fix-it attitude.

"We began our project as part of regular maintenance activities in 1989, when we had a date-related failure on our debt recovery application," explains Judy Draper, director of the software technology and engineering center staff and project director for the Year 2000. "It projects out 10 years and failed when a date became 2199. Actually, when it became '99."

Since then, the agency has made date changes part of its regular maintenance, Draper says.

When asked about the potential risk, she ran down the figures: The SSA prints about 45 million checks per month. That's \$300 billion to \$400 billion flowing yearly into the U.S. economy. "We can't fix it!"

Compounding the SSA's urgency is the fact that the agency does not operate in isolation. "Our data flows everywhere," explains Chris Murphy, a computer specialist at SSA. "Even if all our programs are fixed, we feed - and accept data from the Veterans Administration and the Treasury De-

partment. Our systems are not 'fixed' until they work, and they won't work, unless the interfaces work."

### GTE Corp.

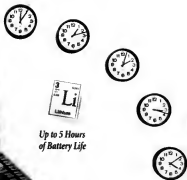
GTE in Rockville, Md., isn't standing still on the Year 2000 issue. Joel Cohen, executive program manager of information technology, and Gerry Roth, vice president/general manager of information technology, share the responsibility of the Millennium Date Conversion project at GTE. "We are coming to closure on Millennium 2000 quickly, systematically and with a consistent methodology to modify, test and verify century compliance across the enterprise," Roth explains.

They believe management support and planning are key to reducing risk to zero. To that end, GTE on Aug. 16 published a policy indicating that all GTE locations must have a defined and managed date conversion plan in operation by April 3, 1996. The plan calls for all software and operational changes to be complete by the end of work on Dec. 31, 1996.

Roth says GTE became concerned with the risks at the end of 1993, when technical staff brought date-related problems to his and Cohen's attention. They circulated a white paper in 1994 that detailed "the nature, scope, possible impacts and solutions." This was the beginning of our corporate awareness program on Year 2000 issues," Roth explains.



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## Year 2000 Problem



Continued from page 98

test on your PC: Set the date and time to Dec. 31, 1999, 11:57 p.m. Turn it off. Wait five minutes. Turn it on. Check the date. Is it Jan. 4, 1999? At any rate, it probably won't be Jan. 1, 2000.

Unless you fix the problem, your PC becomes *practically* useless on Jan. 1, 2000. The same is true of all applications. They're *practically* useless on Jan. 1, 2000. Unless, of course, you fix them.

The problem with most systems is that we don't know when, how or if they'll fail in 2000, but you can't afford not to know. Is the risk of not being able to create invoices acceptable?

Two missing digits have implications beyond the technical. In spite of its origins in the bits and bytes of our organizations, the problem is, and has been, a business problem.

Continued from page 98

"We recognize the risk. We're going to manage it. We're going to do that by setting policies and addressing the issue before it becomes a reality," Cohen says.

#### Northern Telecom, Inc.

When Stuart Guthrie, Year 2000 manager at Northern Telecom, Inc., examined 15 internal systems consisting of millions of lines of code, he and his team "found a Year 2000 impact in each one." The Research Triangle Park, N.C., company has chosen to accept the reality of the risk of other date changes. Guthrie's crew plans to complete a code overhaul by Sept. 28, 1999.

"With proper planning and control of the project, we can reduce the cost of conversion by 75%," he says.

#### Texasco, Inc.

Texasco began its exploration of the Year 2000 issue in March 1995. "We had it to time to examine our systems to know what our risk was," says Carl Roeder, senior technologist at the Houston company.

Texasco sent out a survey, and the results were eye-opening: 65% of its software portfolio of 300 applications was considered "sensitive" to the Year 2000 date change.

"Management wants to know the size of the task. It wants to know the cost of fixing it. It expects it to be fixed," Roeder says.

#### Shell Services Co.

Shell is attacking the Year 2000 issue systematically. The company estimates it has some 70,000 programs and more than 100 million lines of code, says Ron Quiggins, manager of external resources at Shell Services in Houston. His strategy is to evaluate available alternatives.

"We've chosen a good-size application representative of our overall environment and will be performing three pilots on it," Quiggins says. He intends to get firsthand experience with some of the product options and vendors and then make an informed decision.

#### Canadian Imperial Bank of Commerce

John Burns, vice president of projects and Year 2000 project manager at Canadian Imperial Bank of Commerce (CIBC) in Toronto, had read speculation that bank vault systems might have a date problem. "I've verified that our bank vaults will NOT be affected by the Year 2000. They operate on an hourly and not a calendar basis," Burns says.

When asked if raising the specter of malfunctioning bank vaults was stressful, he responded, "On the contrary. When giving awareness presentations, I ask my audience if our bank vaults will be affected by the date change. Most don't know the answer. My response to their silence is, 'Now that I've asked the question, we can't afford not to look. Once we look and know the answer, we can plan the appropriate action.'"

While the bank vault systems are unaffected, the same may not be true of the bank's other programs. Carolyn Swadlow, director of the Year 2000 project at the CIBC, is faced with the questions: How big? How much? She estimates CIBC has more than 200 applications that comprise more than 50 million lines of code. "It is a rough estimate

If you're a programmer, you know code will fail. If you're an analyst, you know programs will fail. If you're a manager, you know applications will fail and what that will do to your business. To know, and to not act, is gross negligence.

An information systems professional, you have more than a mere responsibility to inform management. As IS professionals, you have a moral obligation to convince managers of the magnitude of the problem and rectify it.

The business risks are rooted in the technical foundation of the organization. You built that foundation. You understand how complex systems fail because of misaligning faulty components. You understand the truth behind the thought that for the want of a nail, the kingdom was lost. ■

De Jager is an international speaker who specializes in issues related to the management of technological change. He can be reached at [pdjager@ro.com](mailto:pdjager@ro.com).

based on core systems," she admits. To be more precise, the company is working on an impact analysis to cover all systems.

She's not alone. None of the companies in this article would claim the numbers they used to describe the size of their challenge were anything but guesstimates. That's part of the problem, as Swadlow says. "We need to know how big it is and what pieces need to be changed together because you can't fix half a system."

Defining the "system" is difficult, because there are lots of interconnections within an organization and externally. "We're connected to all the financial networks," Burns says. "Our systems must work with other financial institutions and industry organizations—both domestic and international."

Another area of concern for CIBC is finding personnel to handle all the files. "In 1997, 1998 most of IS will retire up and realize they need to increase staff by 30%, or some such number, over two years to complete the Year 2000 project," Burns says. "If we all require even a 10% to 15% increase in skilled staff, supply will not meet demand."

Part of his plan for the Year 2000 is to accept the fact that there will be a short supply of necessary IS people and to motivate his current staff to stay with CIBC in the long term.

—Peter de Jager

## RELATED RESOURCES

ON-LINE		PRINT
<p><b>The Year 2000 home page on the Internet</b>  <a href="http://www.year-2000.com/">http://www.year-2000.com/</a></p> <p>This site lists articles, additional resources, Year 2000 service providers, frequently asked questions, resources for creating awareness in your organization and even a bit of humor.</p>	<p><b>The Year 2000 mail list</b></p> <p>This discussion list covers all aspects of the issue, from examples of C++ code to management issues relating to resource challenges and updates on Year 2000 events and seminars.</p> <p><b>Send:</b> subscribe year2000  <b>To:</b> Listmanager@shop.net</p>	<p><b>"Tish Tick Tick" newsletter</b></p> <p><b>Contact:</b>  2000AD, Inc.  P.O. Box 200538  Brooklyn, N.Y.  11202-0012  (800) 643-8425</p>
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<p><b>Insurance Systems for the Year 2000</b>  Jan. 25-26  New York  Organized by: IDC USA  Conferences, Inc.  Contact: Sarah Beck  (508) 481-6400</p>	<p><b>International Roundtable for the Year 2000</b>  Feb. 11-14  Scottsdale, Ariz.  Organized by: DSI, Inc.  Contact: Jane Zefferson  (206) 688-1000</p>	<p><b>Year 2000: Blueprint for Success</b>  March 7-9  New York  Organized by: Software  Productivity Group, Inc.  Contact: Bill Ullich  (508) 316-3344</p>



# Now may be the time to give up on WordPerfect. (Obviously, Novell thinks so.)

**Novell to Sell Wordperfect Software Line**

SAN FRANCISCO Oct. 28 — Novell Inc. said today that it intended to sell its entire Wordperfect line of software at a steep discount, reported only in

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# Computer Careers

## Satisfaction guaranteed

Leading IS departments are using a variety of methods to keep employees happy and on board

By Rosemary Caffano

**T**urnover can take a huge toll—in time, money and morale—on any organization. Yet when *Computerworld's* annual Job Satisfaction survey asked information systems professionals what their organizations were doing to minimize turnover, nearly half of those surveyed said "nothing," noting that turnover was "not a problem."

This nonproblem amounted to an average IS turnover rate last year of 9%, with some industries, such as health care and retail, logging in at 11%, according to Deloitte & Touche's annual Leading Trends in Information Services survey.

Despite those averages, turnover is almost nonexistent in some IS departments. What are IS managers at these companies doing to keep employees happy and on board?

Most say they use a variety of techniques from traditional cash bonuses to job-sharing options. In fact, managers say that while competitive salaries remain a key factor in retaining employees, job environments that emphasize quality-of-life issues are becoming just as important.

Here's a sampling of approaches that some IS managers are taking to keep good staff:

**HARVEY SHREDNICK**  
CIO  
Corning, Inc.  
Corning, N.Y.

Shrednick, who is retiring at the end of the year, says Corning's IS turnover rate is around 5%.

His advice: "Have what I consider to be a psychological contract with your people. It says: 'This is what I expect from you in very clear terms, both in general performance as well as specific objectives, and this is what I will do for you.' In essence, you continue to monitor both ends of the spectrum. Are they doing what they've committed to and am I doing my part of the bargain?"

"The goal is to provide them the opportunities they are looking for, and they



will want to stay with the company, especially if they accept and share the vision of where you are taking them."

**DUANE BROWN**  
Systems director  
Arthur Blue Cross/Blue Shield  
Indianapolis

In five years, Brown says, he has lost one person from an eight-person staff. She says it comes down to treating people with respect and the "emotional buy-in."

"I try to treat my people appropriately. I respect them. I get their input for decisions. I am honest with them. I don't make promises if I don't know they will come true. We have weekly meetings, so there is a lot of communication. Then, on

projects, I mix people up. I don't pair the same people together, so they have a lot of exposure in the team."

**MIKE HUIST**  
Manager of financial systems  
administration  
Tosco Petroleum Corp.  
San Antonio

Huist says there is zero turnover in his shop, but he doesn't take all the credit. "It can't be because of their boss because I am an S.O.B. to work for... I have high standards, and I am vocal if they don't [meet those standards]. But they have responded. I would recommend them for any job in the world."

"I challenge them and give them a lot of rope. I let them work without my interference."

**BARRY DRY**  
Global SAP leveraged services manager  
Du Pont Co.  
Wilmington, Del.

Du Pont is one of several companies that had to work overtime to retain IS professionals trained in SAP AG software.

"Retention is a significant issue," Dry says. "We have had a retention issue, particularly in the [SAP] R/2 environment, but we've been working hard at it. We believe we can provide an exciting work environment [and] that there is still an attraction for working with a large corporation—to travel, to experience many different aspects of systems development."

**JERRY HOGLER**  
Systems manager, corporate  
information services  
Caterpillar, Inc.  
East Peoria, Ill.

"I do the standard management things—hopefully reward them financially as well as verbally for their accomplishments. We have division-level recognition programs and achievement of excellence [awards]. They are \$150 cash, plus a day off. The divisions have helping hand awards—recognition and coupons to get something in the canteen. Some people say that's bribery and porky, but deep down, people think it's nice to get recognition."

**STEPHEN L. POOK**  
Vice president of quality,  
business process reengineering and information  
technology  
Equifax Corp.  
Irvine, N.J.

Pook is another boss who says the best strategy is to keep out of people's way. He says his IS turnover rate is in the 1% to 2% range.

"I consider my job to be creating the space for people to be successful in—allowing people to reach their potential by providing them with challenging assign-



ments and then getting out of their way so they can do their work. We try to stay state-of-the-art, and we try to provide the training for them to be successful. We try to listen in what their interests are and career goals, and we try to blend that in with the organization's."

**JAMES WELLS**  
Vice president and CIO  
Haggen-Woodman-Hospital  
Pittsburgh

Wells says he's had seven resignations from a staff of 50 since 1991. He attributes the low turnover to several factors and says an increasing focus on quality-of-life issues is making a difference.

"We've been successful with job sharing [eight employees in a 48-member staff]. They work 20 hours a week and spend time with their families. We keep their schedules flexible enough."

"There are a lot of little recognitions—just knowing people by name and saying 'Hi,' being aware of what's happening in their personal life."

**GUY WOOD**  
Managing director of MIS  
United Grain Growers Ltd.  
Winnipeg, Manitoba

At United Grain Growers, Wood says IS turnover hovers around 2%. A key factor is keeping the work challenging for all employees.

"You have to inform them all where things are going [and] the reasons behind the things we are doing. Make sure you spread the fun projects around. We try to prevent people from becoming typecast. The tendency is to give people projects with which they have the most experience, but that can wear a bit thin for them. So try to make sure the more glamorous aspects of the operation are distributed."



Caffano is a freelance writer in Walpole, Mass.

## Seeds of satisfaction

To stay satisfied, IS professionals want the following from their jobs:

Challenging work environment

Ability to take risks

To be treated with respect

Encouragement to express ideas

Recognition of accomplishments

Flexible work hours

Ability to work on fun projects

Clear sense of mission





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- Sun Microsystems
- HP 9000
- HP 9000
- HP 9000

## Database

- IBM DB2
- IBM DB2
- IBM DB2
- IBM DB2
- IBM DB2

## Network

- IBM DB2
- IBM DB2
- IBM DB2
- IBM DB2
- IBM DB2

## Software

- IBM DB2
- IBM DB2
- IBM DB2
- IBM DB2
- IBM DB2

## Hardware

- IBM DB2
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- IBM DB2
- IBM DB2
- IBM DB2

## Peripherals

- IBM DB2
- IBM DB2
- IBM DB2
- IBM DB2
- IBM DB2

## Miscellaneous

- IBM DB2
- IBM DB2
- IBM DB2
- IBM DB2
- IBM DB2

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# Regional Scope

## A career in D.C.? Capital idea!

By Linda Wilson

**T**he Washington job market has rebounded in the last 12 to 15 months from the economic slump that marked the early 1990s. Information systems professionals certainly haven't been left out of the D.C. boom. Opportunities abound for permanent and contract positions in commercial and government job sectors.

It's an employees' market in the D.C. area for those with client/server skills. Even the mainframe market is strong because the supply of trained talent falls short of the positions available.

"This is the hottest I have ever seen the market," says Burt Wiseman, vice president of RHJ Consulting, Inc., a contract management firm, and Robert Hall Information Systems, Inc., a recruiting firm. Both companies are based in Arlington, Va. "We have had a hard time finding good people, so there is a lot of room for good candidates to come here to live," Wiseman says.

Joe Collins, who is affiliated with George Washington University (GWU), agrees. He is associate director of client services at Systems & Computer Technology Corp. in Malvern, Pa., the university's computer outsource. Collins over-

sees hiring for the IS department at the university. The IS department has more than 70 people on staff.

"There is stiff competition out there. There is page after page of ads [in the newspapers]," Collins says. "It may take us six weeks to find somebody."

Collins is looking for people with client/server specialties because the university has migrated the bulk of its applications off its mainframe, an IBM 3081. He is looking for professionals whose specialties include Unix, Oracle Corp.'s relational database management system and Microsoft Corp.'s SQL Server.

The university also seeks people with LAN skills, particularly those who are trained in Novell, Inc.'s NetWare.

A skill particularly in demand at the university is Hypertext Markup Language (HTML), the publishing language of the World Wide Web. GWU already has a

Web home page up and running. It will design an interface between the Web site and key Oracle databases at the university's main campus. The interface will let students, professors and other authorized users access information such as class listings and availability.

GWU isn't the only organization in Washington struggling to compete for employees. The Pan American Health Organization (the branch of the World



The nation's capital offers plenty of job opportunities for IS professionals, especially those with client/server and World Wide Web experience.

Health Organization that services the American) has put on hold its plans for large-scale client/server development, partly because it is having a hard time finding the right talent.

The organization hired several programmers in 1993 to develop a client/server-based personnel system, but it axed the system last year after the developers quit. The health organization has a NetWare-based LAN on which it runs standard business applications such as word processing, electronic mail and spreadsheets. Most of the bread-and-butter applications run on an IBM 4380 mainframe.

Geico Corp., an insurance company in Chevy Chase, Md., has had a hard time attracting client/server experts, particularly those with skills in Unix, Microsoft Corp.'s Visual Basic and Informix Corp.'s Informix.

"We are still primarily a mainframe shop, but we are migrating many of our applications over to client/server. We have a few systems up and running now and are migrating a lot more over the next couple of years," says Carolyn Rosenberg, director of IS at Geico.

Geico has had trouble finding pro-

grammers because it is in the early stages of its client/server migration. Many potential candidates would prefer to work in shops that already have moved most applications off the mainframe, Rosenberg says.

"Some of these people come on the market for two or three days, and then they are gone," she says.

Geico also has had a hard time finding Cobol programmers. "There seems to be less of a supply," Rosenberg says. "In fact, we have had our staff people approached by other companies."

Despite the robust hiring activity at many organizations, not all employers want more IS talent. Mobil Corp., one of the area's largest employers, in the spring announced a massive corporate restructuring. The company by March will eliminate 5,000 staff-support jobs, including some in the IS department.

Likewise, the Pan American Health Organization has no immediate plans to add to its 20-member IS department.

But these examples don't reflect the otherwise healthy career landscape in the Washington area.

Wilson is a freelance writer in Glen Ellyn, Ill.

### On-line job search

The following Web sites can help to locate IS career opportunities in Washington

**Internet:  
news groups: dc.jobs**

**Career Magazine:  
<http://www.careermag.com/careermag/>**

### City of opportunity

Washington enjoys a lower unemployment rate than many major metropolitan areas

Washington	4.5%
Chicago	5.5%
New York	6.5%
Los Angeles/Long Beach	8.6%
NATIONAL AVERAGE	5.6%

Source: U.S. Dept. of Labor, Bureau of Labor Statistics, figures for August 1995

### The region's top employers

(By number of employees):

- Merrill International, Inc.
- Lockheed Martin Corp.
- Mobil Corp.
- MCJ Communications Corp.
- US Air Group, Inc.
- Gannett, Inc.
- General Food
- General Dynamics Corp.
- Galco Corp.
- Philomac Electric Power Co.

Source: The Washington Post, 1995

### Right tools for the job

The most sought-after skills, according to recruiters and employers

- Unix
- Oracle
- Sybase
- Informix
- PowerBuilder
- Microsoft Corp.'s Visual Basic
- Windows
- MS-DOS

### Projected salaries

Recruiters say IS job seekers can expect the following salary averages in the Washington area:

- Client/server programmers with in-demand skills - \$70,000-\$80,000
- Mainframe programmers - up to \$56,000
- Help desk employees - \$35,000



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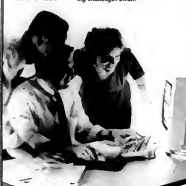
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SOURCE: Skill Survey of Computerworld's Audience, August 1994.

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# Marketplace

## OLE stomps into VBX market

Vendors turn to Microsoft's OLE to broaden controls market

By Daniel Lyons

**T**he biggest thing to happen to the Visual Basic market has been the recent release of Microsoft Corp.'s Visual Basic 4.0 and the move to 32-bit Microsoft OLE controls (OCX). There are hundreds of Visual Basic control (VBX) developers, and virtually all of them are migrating to OCXs because OCXs will widen the market for their components. While VBXs can be used only with Visual Basic, OCXs will work with any OLE-enabled application.

"There's a much broader market to sell to," says David Kelly, a consultant at Hurwitz Consulting Group, Inc. in Newton, Mass.

VBXs are reusable components that developers use in applications instead of writing code themselves. They range from simple widgets for labels, grids and tool bars to complicated spreadsheet and word processing components.

Some say the emergence of the OCX market may herald the era of component software. And today's VBX vendors — the Davids of the software industry — may become tomorrow's Goliaths.

Tom DeBacon, president of VBX maker Visual Components, Inc. in Lenexa, Kan., estimates that the component software industry will grow from its present size of about \$100 million to \$1 billion by the year 2000.

So far, VBX makers have been a little



### Visual Basic controls

slow getting OCX products out the door. Kelly says that's because testing and quality assurance for an OCX is far more complicated than it is for a VBX.

"You're going from having to worry about only one environment, Visual Basic, to having to worry about all the possible things that might call these components. It's just a lot harder," Kelly says.

Martha Etkens, customer services manager at Media Architects, Inc., a VBX vendor in Portland, Ore., says the lag has been caused not so much by technological complexities but by the fact that developers had to wait for Visual Basic 4.0 to be in good working order. "It was close to the release of Visual Basic 4.0 before we got code that was stable enough to develop on," she says.

Lyons is a freelance writer in Ann Arbor, Mich.

## A SAMPLING OF VBX OFFERINGS

**ImageKnife/  
VBX ProPack**  
Media Architects, Inc.  
Portland, Ore.  
(503) 699-9999  
Price: \$249

**Platforms:** Windows 3.x, Windows 95  
**Description:** ImageKnife is a tool that lets developers add imaging components to applications. An OCX version is scheduled to ship in February for \$499. Users of the VBX product can upgrade for \$75. Other products include MediaKnife/VBX, a multimedia tool, and VideoPlay/OCX, a tool for manipulating digital video.

**VBTools**  
Microtools, Inc.  
Marlboro, Ga.  
(770) 525-0968  
Price: \$129

**Platforms:** Windows 3.x, Windows 95  
**Description:** VBTools is a collection of 90 VBXs for interface building, multimedia and networking. The product includes more than 30 "data aware" controls that can be used with the Microsoft Access database engine. An OCX version, called OLE-Tools, is slated to ship this month. OLETools costs \$159.

**PowerPak Pro**  
Progress Software Corp. (Crescent Software)  
Bedford, Mass.  
(617) 280-0900  
Price: \$1,295

**Platforms:** Windows 3.x, Windows 95  
**Description:** PowerPak Pro is a bundled collection of more than 40 VBXs, 20 of which are "data aware." The bundle combines products from Crescent and other developers. The

latest version of PowerPak Pro also comes packaged with an OLE version. Progress Software has released a product called VB4 Plus Pak, which was designed to help developers make the transition to Visual Basic 4.0.

**Visual Developers Suite Deal**  
Visual Components, Inc.  
Lenexa, Kan.  
(800) 599-6500  
Price: \$299

**Platforms:** Windows 3.1  
**Runtime charge:** None.  
**Description:** Visual Developers Suite Deal is a bundle of tools that Visual Components developed. Point products include Formula One (spreadsheet functionality), First Impression (graphics), VisualWriter (word processing) and VisualSpeller (spell checking). The OCX versions of Formula One, First Impression and VisualSpeller are available now. The OCX version of VisualWriter is due in December.

**VBAssist 4.0**  
Sheridan Software Systems, Inc.  
Melville, N.Y.  
(516) 753-0985  
Price: \$179

**Platforms:** Windows 3.x, Windows 95, Windows NT.  
**Runtime charge:** None.  
**Description:** VBAssist contains 57 Description: VBAssist contains 57 tools for doing Visual Basic application development. The latest version supports Visual Basic 4.0 and OLE environments. Sheridan also is shipping an OCX version of Designer Widgets, its interface development tool. An OCX version of Data Widgets, a tool for developing database front ends, is forthcoming.

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# Nov. 17 Stock Ticker

125

## Gainers

Percent

Amgen Inc. (J)	35.0	Intertec Inc.	23.4
Amgen Inc. (J)	35.0	Intertec Inc.	23.4
Amgen Inc. (J)	35.0	Intertec Inc.	23.4
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Amgen Inc. (J)	35.0	Intertec Inc.	23.4
Amgen Inc. (J)	35.0	Intertec Inc.	23.4

Dollar

Amgen Inc. (J)	35.0	Intertec Inc.	23.4
Amgen Inc. (J)	35.0	Intertec Inc.	23.4
Amgen Inc. (J)	35.0	Intertec Inc.	23.4
Amgen Inc. (J)	35.0	Intertec Inc.	23.4
Amgen Inc. (J)	35.0	Intertec Inc.	23.4
Amgen Inc. (J)	35.0	Intertec Inc.	23.4
Amgen Inc. (J)	35.0	Intertec Inc.	23.4
Amgen Inc. (J)	35.0	Intertec Inc.	23.4
Amgen Inc. (J)	35.0	Intertec Inc.	23.4
Amgen Inc. (J)	35.0	Intertec Inc.	23.4

## Hopes and dreams

Sometimes the market fundamentals don't work the way they are supposed to. Principles of price-to-earnings and book-to-tail can be thrown aside for the glitzy lure of following hunches or fulfilling desires.

Internet-related products and companies make up a portion of the distracting glitz in the technology sector. Last week, one of the notable names in this sector, Netscape Communications Corp. (NSCP), announced that it is planning a two-for-one stock split three months after its shares began trading publicly. Market analysts peg the public's continuing hunger for Netscape stock as a desire to invest in an Internet product, even though the company has shown small profit to date.

Micro Technology, Inc. (MTI) has been moving in the opposite direction recently (see chart), and several market watchers say this slide has been caused more by intuition and gut feelings than by solid market news.

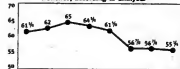
Michael Geron, a market analyst at a division of Donaldson Luffin & Jenrette Securities Inc. in Jersey City, N.J., said Micro is in bad hand when there are market pitters in the semiconductor area. "Micro has a tendency to be on an exaggerated roller coaster" that is controlled by market shifts, he said.

Micro receives more than 90% of its profits from dynamic RAM sales, Geron said. He said each time a rumor about DRAM supply peters up or market whips change, Micro is affected. "Micro is a favorite in institutional trading circles, but it's a 'garden' stock—people buy it to trade, not to eat. Its fortunes depend on the momentum of the market."

Dan Niles, an analyst at Robertson Stephens Co. in San Francisco, agreed. He said the suggestions that Micro will suffer a DRAM oversupply next year are unfounded. "Micro has less capacity coming out in 1996 than they had in 1994 or 1995," said Niles, who expects only a modest price decline in DRAM for the coming year. —Stewart Deck

## Blowin' in the wind

Micro Technology has been tossed around recently, in part due to market vagaries and hunches, according to analysts



Nov. 17 Stock Ticker		Nov. 17 Stock Ticker	
Stock	% Change	Stock	% Change
Amgen Inc. (J)	35.0	Amgen Inc. (J)	35.0
Amgen Inc. (J)	35.0	Amgen Inc. (J)	35.0
Amgen Inc. (J)	35.0	Amgen Inc. (J)	35.0
Amgen Inc. (J)	35.0	Amgen Inc. (J)	35.0
Amgen Inc. (J)	35.0	Amgen Inc. (J)	35.0
Amgen Inc. (J)	35.0	Amgen Inc. (J)	35.0
Amgen Inc. (J)	35.0	Amgen Inc. (J)	35.0
Amgen Inc. (J)	35.0	Amgen Inc. (J)	35.0
Amgen Inc. (J)	35.0	Amgen Inc. (J)	35.0
Amgen Inc. (J)	35.0	Amgen Inc. (J)	35.0

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# COMPUTERWORLD

## Vines loses grip

CONTINUED FROM COVER 1

you will jump-start its revenue, and earnings in the coming months. "We all agreed that the best thing that could happen is that Banyan gets bought by someone who knows what to do with Vines," he said.

### Increased unrest

Such user sentiments have become the rule, not the exception.

Even newly elected ABUI President Mike Lammberg, an information systems manager at Meridian Oil Co. in Fort Worth, Texas, said, "If Windows NT Server had a directory service to equal StreetTalk, we could be persuaded to switch."

Still, Banyan users almost unanimously extol the technical superiority of Vines, particularly the StreetTalk, intelligent messaging and security capabilities, as compared with current versions of Novell's NetWare and Microsoft's NT Server. And the Vines network requires only about one-third the number of network administrators as other products. These advantages, the users said, mean they will stick with Vines for as long as possible.

### Looking to get out

Insiders at several of Banyan's largest accounts—including a major sneaker manufacturer, a Japanese auto manufacturer and several large high-tech firms—confirmed that their businesses are considering migrating to NT Server. Most of these users had hoped Banyan would release a version of ENS for NT Server to give them StreetTalk services minus Vines with the application services of NT.

"We're definitely tossing Vines. StreetTalk is great, but I can get along just fine with NT Server's domain services. If it means using a widely accepted product," said an IS manager at a defense contracting firm in California.

Sheehan noted that while StreetTalk is "unbeatable," Vines file-and-print services are only average. "That's why Windows NT is unmaking in the back door at many Vines shops. But if NT gets the same messaging, directory services and security, then it's a long Vines."

But users such as Lloyd Dunham, director of IS at Falconbridge Ltd., a mining and exploration firm in Toronto, said his

firm remains committed to Vines not because of Banyan's newfound direction, but "because at the end of the day, we look around, and there's no other killer product that can match StreetTalk."

## Banyan exec denies users are restless

**F**ew, if any, users have expressed plans to abandon Vines, according to John Paul, senior vice president of Banyan's newly created Internet Products Division.

After he was apprised of the sentiments expressed by some of his largest accounts (see story on p. 126), Paul asserted that Banyan is getting back on track and is well-positioned to return to profitability in the first quarter next year.

He cited Banyan's recent decision to lay off 100 people and divide the company into two specific product divisions as evidence of its new focus.

"We are continuing to invest heavily in Vines and will break the 20-year limitation in the next major release sometime in 1996. We'll debut our Internet Yellow and White Pages business directories by year's end," Paul said. "Banyan is well-positioned in both the core Vines product and in emerging businesses like the Internet."

Ed Cloutier, vice president of marketing in the Enterprise Networking Division, disclosed that Banyan will entice users with beefed-up StreetTalk services.

For starters, StreetTalk, enabling of Windows NT Server's File and Print Services that gives Windows users the ability to access file and print services residing on other platforms from their desktops.

—Laura DiDio

## Cisco preps ATM, remote product blitz

Technology outlay to help sharpen firm's enterprise focus

By Bob Wallace and Laura DiDio

Internetworking market titan Cisco Systems, Inc. is expected this week to announce a new Asynchronous Transfer Mode (ATM) switch, remote access products and routing software features. *Computerworld* has learned.

The 1010 switch has five slots and uses a 60-MHz 68040 Motorola, Inc. processor. It will ship in the first quarter next year, sources said.

The San Jose, Calif., firm will offer incentives to migrate from its older LightStream 100 ATM switch to the new switch, sources briefed by the vendor said.

"I expect this new switch to compete well with Bay Networks' LattisCell switches and Pure Systems, Inc.'s ASX-1000

ATM switches," said one company insider who requested anonymity. "It's a solid me-too product. It does signify that Cisco is fully committed to ATM."

The 1010 supports a full range of ATM quality-of-service features and can be managed from the vendor's CiscoWorks suite of network management applications. It will support virtual LANs, which are logical rather than physical LANs.

### First fruits

Cisco also will announce the 750 series, a trio of remote access products that are the first fruits of its buyout earlier this year of Integrated Services Digital Network remote access pioneer Combustel, Inc.

The series supports IP and Novell, Inc.'s IPX routing. Price-

ing starts at less than \$1,000. All models come with ComstarPro, a graphical configuration and installation software package.

Cisco also will announce Cisco Remote, desktop client software that supports Point-to-Point Protocol (PPP) and Serial Line Internet Protocol over IP and IPX. It comes with Netaccess Communications Corp.'s 1.22 browser, remote node capabilities and remote control from Fusion Computing, Inc.

It also comes with Altronic, Inc.'s Powerburst remote node accelerator. Cisco Remote will ship next month. It will cost \$199 per desktop.

Cisco will soon announce new features for its file/network Operating System software, IOS Version 1103 will support multi-link PPP and outlink callback.

## E-mail chaos

CONTINUED FROM COVER 1

at Rapport Communication in Atlanta.

The problem with E-mail directories, which are databases of user names and their mail addresses, is that each mail system has its own directory. It is often hard to exchange information among different directories. That is where directory synchronization helps. But because the fields in the directories are often different, all information can't be synchronized.

A lot of companies need hand-holding as they try to bring some semblance of order to their chaotic world of directories. The X.500 directory protocol, which defines a distributed directory, is still too immature to be implemented successfully.

But, "you can see the light at the end of the tunnel," Rowe said. "You can see X.500 plots."

**Time-consuming**  
Directory implementation requires a lot of planning, noted Mark Hirst, a systems engineer at AstraMerck, Inc. in Wayne, Pa.

"What would the end user see? Where should he go for the

address? When a user goes for an address and gets several, can he choose the right one?" Hirst said. These are essential questions that must be answered in the planning stage, he said.

There are also political issues surrounding E-mail systems, said Chris Seymour, an independent consultant who worked with BT for 30 years before he took the "golden wheelbarrow"—the British equivalent of the golden handshake.

In a telecommunications company such as

BT, said the battle between voice mail and E-mail

modifies the political waters. Staffs such as the one with All-in made the office automation group's task even harder. "The top management, the board, loses confidence," Seymour said.

After that episode, Seymour said, the head of the office automation group was moved unanimously to another group at the company. In fact, the job of head of office automation was known as the poison chalice, he noted.

On the plus side, directories caused enough embarrassment at BT to convince upper management that something had to be done, Seymour said. One low-level engineer in the field, for example, was reeling all the

mail of a board member because they had the same first initial and last name.

To handle the situation, BT installed a master directory on a mainframe, which finally solved the problem. Seymour, who designed the directory, a network took the daunting task of putting 80 directories onto a master directory. The company had four main mail systems, with a smattering of others, and each had several directories.

"What they had done was move to a conceptually simple directory synchronization. In other words, they should have consolidated everything into a central directory and then propagated out the changes to all the directories on the network," said David Ferris, president of Ferris Research in San Francisco.

In a recently published report

"Implementing Corporate Directories: A Planning and Management Guide," Ferris and co-author Charles Wolverson suggested that users do the following:

• Choose a single architecture for directory integration.

• Resolve any policy issues, such as what the relationship will be between the corporate and messaging directories.

• Determine what information will go into the directory, who will maintain it and who will have access to it.

• How well it isn't a good idea to have the directory reflect the organizational structure of the company because that keeps changing.

## The Back Page

## Net administrators approach ATM with caution

Charles Babcock

Network suppliers made a raft of ambitious Asynchronous Transfer Mode (ATM) announcements at the end of 1993, but two years later, not many user sites have implemented ATM. Why are network administrators holding the technology at arm's length?

I raise this question repeatedly with network managers. One of them, Ole Mikkelsen, manager of network services at Amgen, a biotech firm in Thousand Oaks, Calif., says ATM is on his mind and in his global network thinking, but it's still somewhere out there in the future.

ATM is an attractive concept, but it's pricey, Mikkelsen says. And, he says, he doesn't need to invest in the world's most expensive network technology when he already is paying for leased lines to maintain a simple point-to-point analog network between Thousand Oaks and dozens of sites around the world.

Mikkelsen is upgrading the company's network in Europe to frame relay, not ATM. Frame

relay is more complex than his point-to-point network, but it uses public carrier lines as needed rather than leasing them constantly. There's also more competition to supply it. He expects to actually reduce his costs.

A year ago, Mikkelsen struggled to incorporate a capacity for diverse routing in the point-to-point network in Europe, so the loss of a leased line wouldn't shut down communications with a site there. He'd built up the frame-relay network with ISDN lines, which primarily supply teleconferencing service.

"It doesn't make sense to have separate lines for voice, video only and data only from Thousand Oaks to Cambridge, England," but that is what Amgen has achieved as a step forward in network design, he says. ATM is attractive as a future networking scheme because it cell-based switching is suitable for all three communi-



ATM transmissions open direct, temporarily dedicated circuits that let a data stream move between two points like a bullet train.

cations — not that Mikkelsen really wants the job of supplying telecommunications.

So why aren't organizations moving to ATM? There are many different ATM players, and they prefer to address the part of the network with which they are most acquainted and in which they have the most expertise. Consequently, it can be difficult to scale an ATM network up or down with one company's line of products, Mikkelsen notes.

The variety of players means it's difficult to know, despite their shared ATM label, whether their products work well together, he says.

"It hasn't had the burn-in it's

immature," he says.

Other network managers complain that it isn't clear how they will run Novell's NetWare and their other LAN systems on ATM, even though theoretically ATM scales down to desktop users in

effect, the network operating systems need to be rewritten for ATM.

ATM management tools aren't there yet. You can't manage an ATM network in detail the way you can other networks.

Still, nothing quite matches ATM's promise. Unlike Ethernet transmissions, which travel somewhat haphazardly between two points, ATM transmissions open direct, temporarily dedicated circuits that let data move between two points like a bullet train. A point Mikkelsen didn't emphasize, but one that could aid ATM's cause, is its ability to scale up or down easily. By overbuilding his ATM network, he could have alterna-

tive switching hubs standing by in case something goes wrong at one of his major hubs.

The day Mikkelsen became manager of network services at Amgen in January 1984, the Northridge earthquake struck. The front of the building that housed Amgen's emergency operations center popped all its bolts, separating from the rest of the building. The emergency center was moved, Amgen's global network remained up and running and the firm's production of the valuable, genetically engineered blood proteins, Neupogen and Epogen, continued unabated. But flexibility and recoverability became a more pronounced part of systems-thinking at the firm.

If it also could collapse three different lines into one that carries voice, video and data, an ATM network with flexible routing and an ability to maintain guaranteed bandwidth might look more attractive to many network managers.

Babcock is Computerworld's assistant editor. His Internet address is charles\_babcock@cw.com.

## Inside Lines

## Feel our pain, Uncle Sam

Betting that the White House and Congress can't feel each other's pain enough to end the budget impasse? Networking software vendor Firefly Communications is hosting a "government shutdown sweepstakes" on its Web site. The cybercynic who comes closest to predicting the day and time the shutdown will end wins an unspecified but "delightfully tasteless gift lampooning the [political] culprit of choice," the site says. Make your voice heard at <http://www.webcom.com/~rv/vote.html>.

## Something to be thankful for...

IBM is hoping that this week network managers will give thanks for the four router models the vendor will announce today. One source said Big Blue's new 2210 Nways Multiprotocol Routers will support up to two LAN ports plus four WAN ports. The LAN ports can be one or two-Token Ring ports, two Ethernet ports or one of each. The routers come with a slot for an ISDN Basic Rate Interface, with ISDN Primary Rate Interface and Asynchronous Transfer Mode interfaces to follow later. Also due is a new software release for all 2210 routers. It supports Digital DECnet and Open Systems Interconnection routing support, data compression over Point-to-Point Protocol links and upgraded Shiva Link Switching support. The new routers will ship Dec. 8. Pricing wasn't available.

## Will Java be IBM's cup of tea?

IBM and Sun Microsystems remained coy last week about whether IBM will sign a license to use Sun's

Java programming language. Java was designed to let users download programs and run them on a wide variety of machines, and it seems like a perfect fit for IBM's dreams of Internet-centric computing. A Sun source says no IBM Java license is already in the works, though it hasn't been signed yet. But IBM spokesmen insist that Java is only one among many interesting technologies under the Big Blue gaze.

## CICS looks for a SPARC

Trying to fill a big hole in its client/server CICS strate-

gy, IBM is porting the Unix version of the venerable transaction processing software to Sun's Solaris Unix operating system, sources close to IBM said last week. Sun is cooperating, and both companies will market CICS for Solaris when it ships next year. IBM also is trying to get Hewlett-Packard and Digital to let it sell existing CICS implementations that run on their Unix platforms, the sources said.

## Comdex cover-up

IBM wanted to pit its upcoming DB2 for Windows NT database in a head-to-head rivalry at Comdex with Microsoft's SQL Server and Oracle on an NT box. Just one problem: Oracle's licensing rules prohibit customers from publicly discussing demo and benchmark results. So IBM had to put a towel over the machine that was running the Oracle database. They assure us that DB2 ran the demos faster, but only the towel knows for sure.

A network administrator, recently clobbered by the FAA due to budget cutbacks, developed a fear of flying without ever leaving the management console. E-mail ran two to three pages daily, summarizing the near misses and incidents such as birds being sucked through jet engines and dangerous icing conditions. "The public would be shocked to read that E-mail. I know I'd prefer not to fly in winter." If you have some interesting E-mail to share or would like to pass along news items or tips, get in touch with Computerworld by calling news editor Morynna Johnson, at (800) 820-8179 or sending mail to [mjohnson@cw.com](mailto:mjohnson@cw.com). The 24-hour voice-mail tip line is (800) 343-6474 or (508) 820-8555.

## The 5th Wave by Rich Tennant



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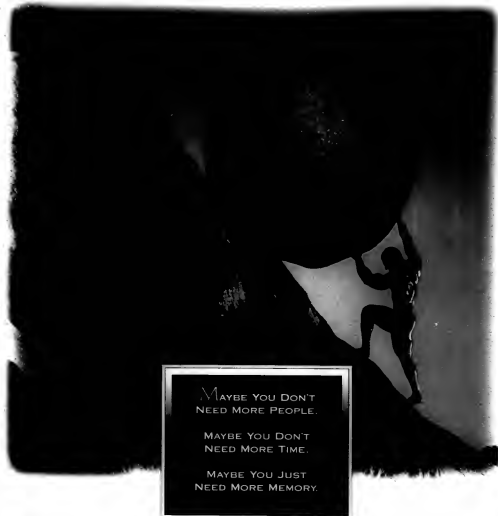
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